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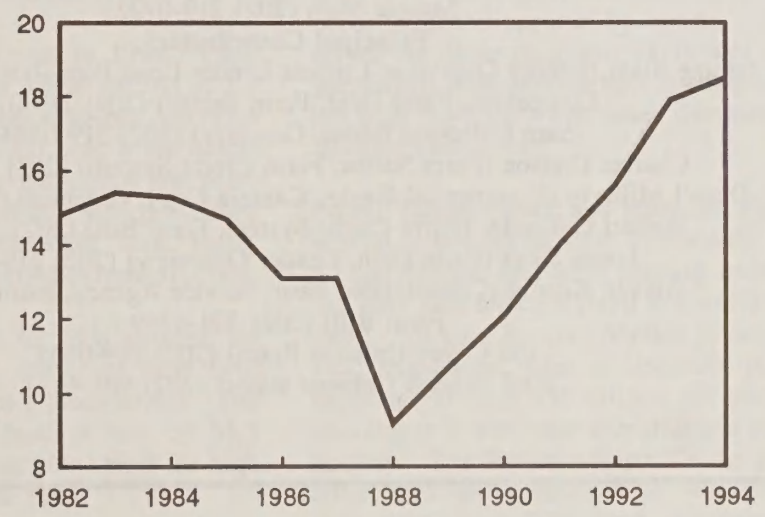
AIS-56
February 1995

Agricultural Income and Finance

Situation and Outlook Report

Capital plus loss allowances reach new highs at Farm
Credit System district banks and local associations

Percent of assets



Annual Lender Issue

Contents

Summary	3
Farm Sector	
Farm Sector Financial Indicators Show Mixed Results	4
Lender Overview	
Improvement Continues in 1994 as Demand for Farm Loans Increases	6
Farmers' Use of Repayment Capacity Rises	9
Agricultural Interest Rates	
Farm Loan Rates Increased Throughout 1994	10
Current Lender Loan Portfolios	
Commercial Banks Hold Largest Share of Farm Loans	12
Agricultural Lender Situation	
Agricultural Banks Remain Highly Profitable	14
Small Agricultural Banks Are the Biggest Farm Lenders	16
Farm Credit System Profits Fall, but Capital Building Continues	18
Farm Credit System Performance Varies Among Districts	20
Farm Credit Institutions Attain High Capital Levels	22
Consolidated Farm Service Agency Delinquencies Continue To Decline	24
Consolidated Farm Service Agency Guaranteed Lending Surges	26
Life Insurance Company Farm Loan Portfolios Improve	28
Farmer Mac	
Is Farmer Mac at a Crossroad?	30
Agricultural Finance Issues and the Farm Bill	
Agricultural Income, Asset Values, and Risk Will All Be Affected	32
Special Articles	
Credit as a Factor in Determining Farmland Values: What Does the Evidence Show?	35
Young Commercial Farmers: Their Financial Structure and Credit Sources ...	40
List of Tables	45
Appendix Tables	46

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Summary

Financial institutions serving agriculture continued to experience improved conditions in 1994, and further modest gains are expected in 1995. Total farm business debt at yearend 1994 is estimated at \$148.1 billion, up 4.3 percent from a year earlier, but 23.6 percent below the 1984 peak. Commercial banks accounted for 77.3 percent of the estimated \$6.2-billion increase in farm lending in 1994. Total farm business debt is expected to grow 3 percent in 1995. Creditworthy farmers should have adequate access to loans, mostly from commercial banks and the Farm Credit System (FCS), the largest suppliers.

Agricultural lenders generally found the demand for farm credit was stronger in 1994, especially for short- to intermediate-term loans (nonreal estate credit). Much of the increased demand is related to financial restructuring following the flood- and drought-ravaged crops of 1993. Total bank loans outstanding increased 8.7 percent, or \$4.8 billion, in 1994, with 69.3 percent of the dollar volume coming in the nonreal estate portfolio. Total farm debt held by commercial banks grew 14.9 percent during the 2 years 1992-94. FCS total lending only expanded 2 percent during 1992-94, but its nonreal estate loan portfolio grew 13.2 percent.

Interest rates on new farm loans made by farm lenders increased throughout 1994, reversing a downward trend that began in the early 1980's. The differential in the cost of borrowed funds between farm and nonfarm business customers narrowed in 1994, reflecting greater competition in agricultural lending and a strong farm economy that reduced the risk of extending credit to farm borrowers relative to nonfarm businesses. Agricultural interest rates are expected to rise throughout 1995, although to a lesser extent than rates anticipated for the general economy.

Agricultural banks had another good year in 1994. Their annualized mid-1994 rate of return on assets (ROA) of 1.2 percent matched their solid 1993 performance. At 12.4 percent, return on equity capital (ROE) was a bit below 1993's 12.8 percent but well above levels seen a few years earlier. With nonperforming loans and loan loss provisions down to 1.1 percent and 0.2 percent of total loans, respectively, agricultural banks' loan portfolios remain strong.

Average loan-to-deposit ratios grew to 64.0 percent for agricultural banks on September 30, 1994, up from 60.0 percent a year earlier and 58.0 percent 2 years earlier. The loan-to-deposit ratio has increased from a low of 53.5 percent in 1987, but the current ratio remains below the high of 68.2 percent recorded in September 1968.

The FCS entered 1995 in strong financial condition. While loan volume remains sluggish, loan quality continues to improve. Earnings have fallen but remain strong, and the system continues to build capital and reduce nonperforming assets. FCS capital has now returned to levels not seen since the early 1980's due to loan loss recoveries, conversions of

protected borrower stock to at-risk stock, and high net interest margins experienced since 1991.

During 1994, the FCA and FCS institutions took steps to enhance efficiency, reduce per unit costs, and increase loan volume. Efforts that are at least partly motivated by the desire to improve FCS efficiency include FCA's campaign to identify and reduce regulatory burden, joint ventures among FCS entities to provide data processing or other support services, and several proposals to increase the range of services provided.

With the signing of the Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994 (P.L. 103-354) on October 13, 1994, the Farmers Home Administration's (FmHA's) farm credit programs were transferred to the new Consolidated Farm Service Agency (CFSA). Created in the aftermath of the Great Depression, FmHA was nearly 50 years old when it ceased operation. It once administered a broad range of grant and loan programs for agriculture and for rural businesses, communities, and housing. Farm credit programs were little affected by the transfer of authority.

Outstanding principal on CFSA direct farm loans fell \$1.1 billion to \$12.6 billion at the end of fiscal 1994. The decline occurred despite a \$200-million boost in obligations, which reversed a decade of declines in direct farm lending. Guaranteed obligations surged \$400 million during the year to a record \$1.8 billion.

Funding for most direct and guaranteed programs will be tighter in fiscal 1995 as total lending authorities were cut by about 10 percent. Applicants to the direct programs are more likely to experience funding shortages, which could occur in some regions by spring. Some applicants not served by direct programs likely will obtain credit through guaranteed programs. A backlog of unobligated applications left over from 1994 has raised demand for the smaller 1995 lending allocations.

Facing falling capital and revenues, Farmer Mac undertook several initiatives in 1994 to rekindle its secondary market for agricultural and rural housing mortgages. Farmer Mac has only guaranteed a small \$38-million pool since October 1992. To spur its nine poolers to securitize loans, Farmer Mac announced plans to decertify poolers if they fail to securitize at least \$50 million per year. Farmer Mac also announced it will enter into strategic business alliances with poolers. The Western Farm Credit Bank was the first to enter into an alliance that will provide for the first securitization of FCS farm mortgages. If securitization remains weak in 1995, Farmer Mac might ask for a legislative fix. Farmer Mac II, the secondary market for USDA-guaranteed loans, continued to grow in 1994, with sales reaching nearly \$50 million.

Farm Sector Financial Indicators Show Mixed Results

Agriculture remains financially strong despite lower farm income and stagnant equity.

Favorable growing conditions and record crop and livestock production in 1994 lowered prices for a broad spectrum of commodities. Farm program participants will be compensated for low prices with larger government support payments--up 25-50 percent to \$10-\$12 billion in 1995. The 1994 record output, which was largely due to record yields, is unlikely to be repeated in 1995. A prolonged period of excess crop production, declining farm prices, and rising stocks is unlikely. U.S. agricultural exports are projected to be \$48.5 billion in fiscal 1995, up 11.5 percent from 1994.

Net Cash Income Down in 1994

Net cash farm income, which measures sales during the year, fell in 1994 to \$50.8 billion or about 13 percent below the record of \$58.5 billion in 1993. Forecasts for 1995 suggest that net cash income will be unchanged from 1994. Net farm income, which assesses the net value of calendar-year production, including the portion placed in storage, grew 2.8 percent in 1994 to \$44.6 billion, but is forecast to be down 10 to 20 percent in 1995.

Most of the decline is attributable to lower livestock receipts. Prices for cattle, calves and hogs declined in 1994 and though some recovery is expected for the latter half of 1995, total receipts will likely be lower than in previous years. Given normal weather and the current demand situation, income to the crop sector is expected to remain unchanged in 1995 from 1994. Therefore, regions where cattle or hogs comprise a large share of agricultural production are expected to experience declines in net cash income while regions more reliant on crop production are expected to experience steady to increasing net cash income in 1995.

Low hog prices will have the greatest impact in the Midwest, where many farm operators are still recovering from the 1993 floods. In October 1994, one-fifth of the agricultural bankers in the Chicago Federal Reserve District indicated that repayments were lower than a year ago. While financial stress among some farm operators is indicated, a widespread farm financial crisis is not likely. A majority of the bankers in the flood-affected States anticipate a rise in net cash earnings for 1994-95 as crop yields recover.

Large supplies of beef and competing meats depressed cattle prices in 1994. Prices are expected to remain steady through 1995 resulting in reduced receipts by cattle producers. Lower cattle prices from 1994 are likely to adversely affect income in the Southern Plains, Northern Plains, and Mountain regions, where cattle and calves make up over 40 percent of gross cash farm income. The Southern Plains may be particularly vulnerable with over 60 percent of gross cash farm income from cattle. The Pacific region is another area of some concern with over 20 percent of farm operator debt held by financially stressed farms in January 1994.

Much of the indicated stress can be traced to the prolonged drought that ended in 1993 and reduced exports.

Total production expenses used in calculating net farm income are forecast at \$163.1 billion for 1994 and are forecast to range from \$160 to \$168 billion in 1995. Potential interest and fertilizer expense increases are of some concern. Farm interest rates bottomed out in early 1994 after declining steadily since early 1989. The importance of interest rates to farmers is shown by the fact that in 1994 interest expenses of \$11.1 billion were 7.7 percent of farm cash expenses and they compare with the \$50.8 billion in net cash income registered that year. Changes in interest rates and resultant interest expenses thus can significantly affect farm income.

Balance Sheet Stagnant

U.S. farm business assets are estimated to have risen \$29.0 billion during 1994 to \$917 billion. Total nominal assets are forecast to be between \$912 and \$922 billion in 1995, with a growth rate of -0.5 to 0.5 percent. These small changes reflect a stable agricultural economy in nominal terms. However, the real value of farm assets is projected to increase only 1.1 percent in 1994 and is forecast to decline in 1995.

The total value of farm real estate assets is projected to rise 3.9 percent in 1994. Real estate value change in 1995 is expected to be slight. Nonreal estate asset values are forecast to be stable, compared with 1994's gain of \$3.2 billion. Total farm debt is anticipated to increase 2 to 3 percent following a 4.3-percent rise in 1994.

The stable value of farm assets and the 2- to 3-percent rise in debt indicate that farm business equity will decrease about 0.5 percent in 1995 to about \$765 billion. This compares with a 3.1-percent increase in 1994. The moderate equity decrease for 1995 reflects a stable situation, and it is projected to trail the general rise in prices of about 2.7 percent. As a result, the real (1987 dollars) equity level is forecast to be down 3 percent during 1995.

The real value of farm assets in 1995 is about the same as it was in 1962. However, during this 35-year period, the inflation-adjusted level of farm debt has increased almost 35 percent. Real farm equity has generally trended downward since peaking in 1980, and is projected to be more than 2 percent below its 1962 level at the end of 1995. Unchanged asset values, and a higher debt load suggest that U.S. farming will be operating with higher fixed costs at the end 1995 than it was the case 30 years ago.

The farm sector's financial indicators have shown general improvement in recent years, but now are giving mixed signals. Total farm debt is now increasing, equity is growing but slower than the rate of inflation, the debt load relative to income is up slightly, farm income is down somewhat, but the debt to asset ratio and total rate of return are at levels considered normal.

Figure 1

Total farm business debt increasing

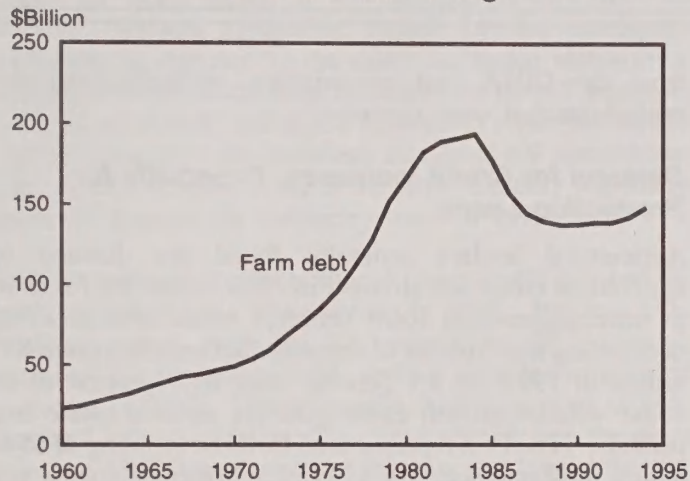


Figure 2

Annual change in farm debt

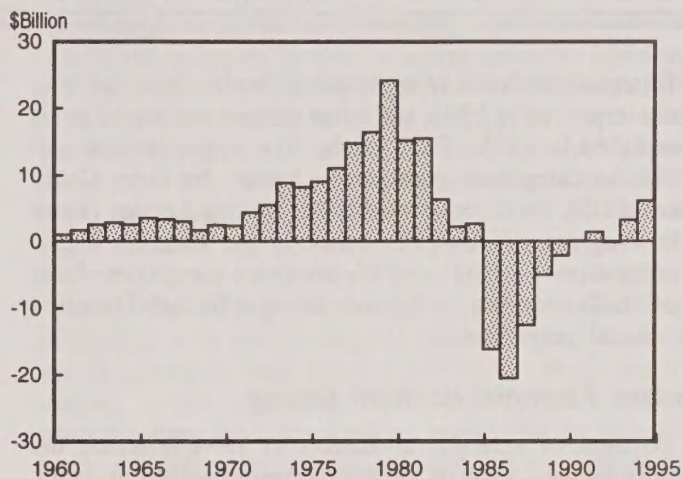


Figure 3

Farm sector balance sheet

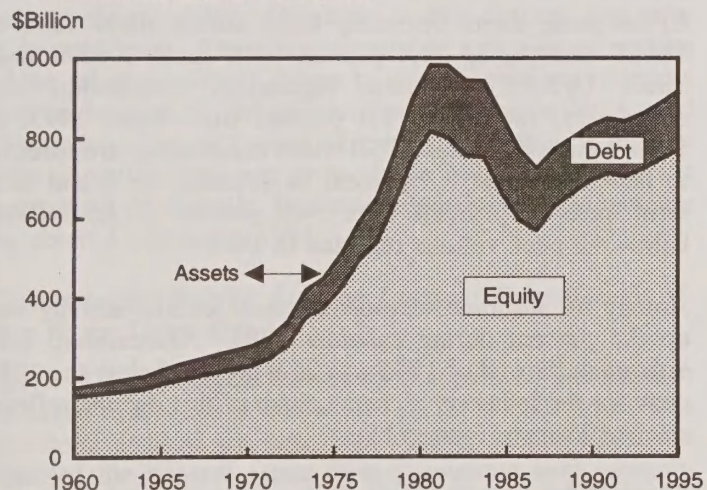


Figure 4

Farmers debt load now increasing

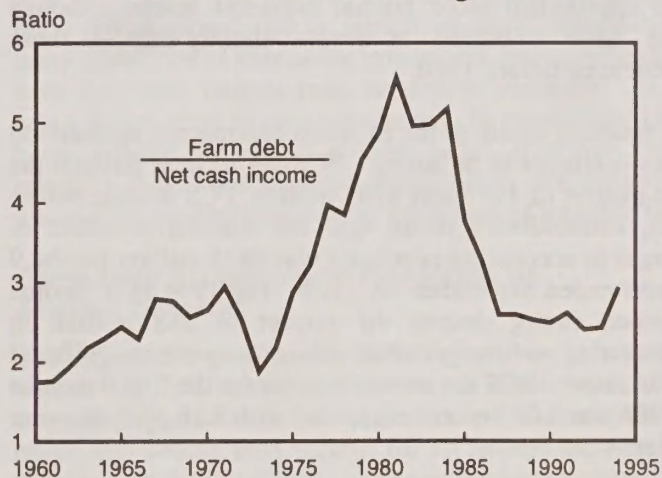


Figure 5

Real net farm and net cash incomes lower

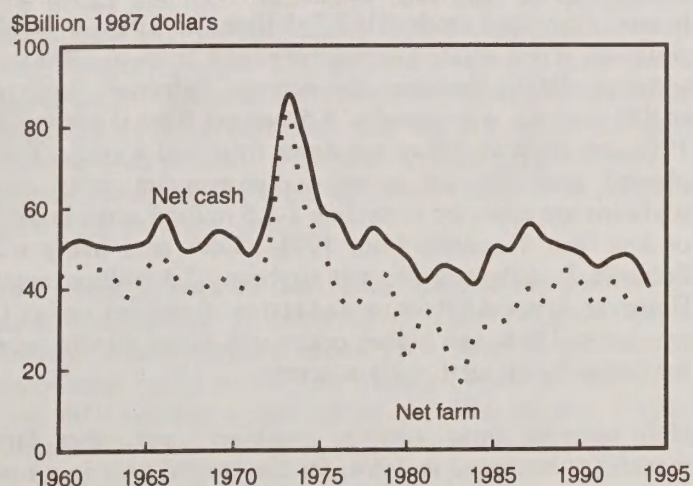
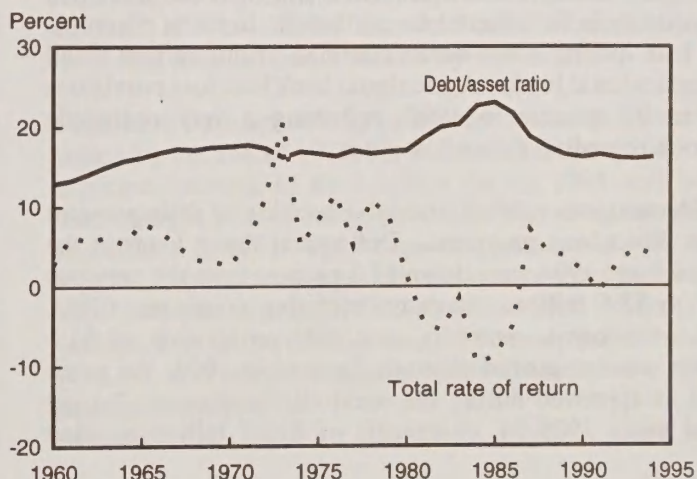


Figure 6

Farm sector debt to assets and total rate of return at more normal levels



Improvement Continues in 1994 as Demand for Farm Loans Increases

Farm lenders have experienced several profitable years and entered 1995 in financially sound condition. Total farm business debt is expected to grow 3 percent in 1995.

The financial condition of agricultural lenders was stable or slightly improved in 1994, and some modest additional gains are expected in 1995. Each of the four major institutional farm lender categories--commercial banks, the Farm Credit System (FCS), the Consolidated Farm Service Agency (Farm Credit Program [CFSA-FCP--formerly the Farmers Home Administration--FmHA]), and life insurance companies--faces unique challenges, but each is in a stronger financial position than several years ago.

Lenders' Financial Position Strong

The position of agricultural lenders in 1994 reflected the generally healthy state of farmers' finances in recent years. All major institutional lender groups except CFSA continue to experience low levels of delinquencies, foreclosures, net loan chargeoffs, and loan restructuring. As financial stress declined after peaking in the mid-1980's, financial indicators have approached more normal historical levels, although some have stabilized at levels slightly above those experienced before 1980.

The financial health of the FCS and commercial agricultural banks continues to be strong. FCS net income through the third quarter of 1993 was \$765 million. FCS income before taxes, extraordinary items, and the cumulative effect of changes in accounting principles was \$875 million for the 9 months ended September 30, 1994. The 1994 FCS income remained strong despite the impact of \$48 million in restructuring and merger costs--costs that were insignificant a year earlier. FCS net interest margin for the first 9 months of 1994 was 3.07 percent, compared with 3.16 percent a year earlier.

Agricultural banks reported high average return on equity (ROE) and return on assets (ROA) for the year ending June 30, 1994, and very low rates of net loan chargeoffs. Continued strong performance in ROA indicates excellent loan quality in farm bank loan portfolios. In terms of returns and loan quality, farm banks continue to outperform small nonagricultural banks. Agricultural bank loan loss provisions fell to 0.2 percent in 1994, reflecting a very optimistic outlook regarding future loss rates.

CFSA continues to work through a backlog of delinquencies in its direct loan programs. Delinquent direct loans at the end of fiscal 1994 were down 13.3 percent from the previous year to \$3.6 billion. Loan restructuring continues; CFSA loan writedowns, writeoffs, and debt settlements of \$1.1 billion were approved through September 1994, the same level as approved during the previous fiscal year. During fiscal years 1989-94, chargeoffs of \$13.8 billion resulted

from the CFSA loan writedowns, writeoffs, and debt settlements that were approved.

Demand for Credit Increases, Especially for Production Loans

Agricultural lenders generally found the demand for agricultural credit was stronger in 1994, especially for short-to intermediate-term loans (nonreal estate credit). Total outstanding loan volume of commercial banks increased \$4.8 billion in 1994, or 8.7 percent, with 69.3 percent of the dollar volume growth coming in the nonreal estate loan portfolio. The FCS reported total loans outstanding of \$54.6 billion on September 30, 1994, 2.5 percent above a year earlier. FCS long-term real estate loans, however, increased less than 0.3 percent during the year ending September 30, 1994, reflecting constant demand for mortgage credit.

CFSA made direct operating loans during fiscal 1994 of \$651.0 million, up 19.4 percent from fiscal 1993. Total direct CFSA obligations (operating, ownership, and emergency) increased 31.0 percent from fiscal 1993, to \$878.7 million. Total CFSA loans outstanding are forecast to have decreased 8.3 percent in calendar 1994 and total farm loans at yearend were 54.9 percent (\$13.5 billion) below the peak volume reported in 1985.

Among life insurance companies, total lending activity was up 0.3 percent during calendar 1994. Outstanding loan volume at the end of 1994 was 25.8 percent below the 1981 peak for the industry. A small share of this decline reflects sales of loans to Farmer Mac.

Demand for nonreal estate business loans should increase about 2 percent in 1995. The outlook for farm input consumption and expenditures in 1995 will be influenced by fertilizer and energy prices. Farmers are expected to spend between \$160 and \$168 billion in 1995 for agricultural inputs, compared with \$163.2 billion in 1994--a stable situation. Total planted acreage of major crops in 1995 will contract slightly because the acreage reduction program (ARP) for corn was raised to 7.5 percent from 0 percent in 1994 and soybean prices are down from last spring. Total planted acres for the seven major program crops plus soybeans are expected to decline 1-1.5 million acres in 1995 or less than 1 percent from 1994. Corn area likely will decrease 3 million acres, and soybeans 2.5 million acres. However, lower ARP for upland cotton--0 percent versus 11 percent in 1994--and higher prices will boost planted acres for cotton by about 1 million acres.

Unit sales of farm tractors, combines, and other farm machinery increased in 1994, for the second year in a row.

Purchases of farm tractors totaled 61,400 units in 1994 compared with 57,000 in 1993. Combine purchases were up 9 percent. Demand improved in 1994 not only because of the farm income situation but idled acres were down, meaning more acres were planted, which also helped push up farm machinery demand. Increased machinery sales help strengthen the demand for short- and intermediate-term farm loans. A larger share of this demand is now met by "captive" finance companies owned by the machinery companies as opposed to the more traditional institutional lenders. Nonreal estate farm business debt grew 7.4 percent in 1994; individuals' and others farm debt (where the captive finance companies are included) expanded 6.9 percent that year. Recent developments in the farm economy will likely lower the demand for machinery loans in 1995.

Activity in the land market should create stable demand for mortgage loans (real estate credit) in 1995. Per acre U.S. farmland values increased 6.4 percent in 1993, rose an estimated 3-4 percent in 1994, and are expected to advance 3 percent in 1995. This will make 9 straight years of U.S. farmland value increases. But, nationally, during the years since the 1987 low, the rate of increase has lagged the rate of inflation in 4 of the years. There are reports of farmland price gains of 5-9 percent and anecdotally even more in some localities of the Midwest and Plains during the past year. It is unclear, however, that the value increases have led to corresponding increases in the demand for farm mortgage credit. There are reports that a significant portion of the price gains were driven by outside nonfarm investors and not by farmers. Moreover, there are reports that a good share of the farmer buyers were larger operators who were able to pay in large part or in whole with cash and not via borrowing. Nationally, farm real estate debt should increase by about 3 percent in 1995.

Commercial Banks Are the Largest Beneficiary of the Farm Loan Gains

Much of the increased loan demand apparently is related to financial restructuring following 1 or 2 bad crop years. The increased demand for farm loans during 1992-94 thus has affected the nonreal estate farm production loan category much more than the real estate mortgage loan category--the former up 11.3 percent compared with the latter's 1.8 percent. Moreover, the loan growth has favored commercial banks the most, followed by individuals and others (merchant and dealer credit). Total farm debt held by commercial banks grew 14.9 percent during 1993-94; the nonreal estate bank category jumped 16.2 percent while real estate loans increased 12.7 percent. Debt owed to individuals and others expanded 10.7 percent with the nonreal estate category growing 14.8 percent. FCS total lending only expanded 2 percent during 1992-94, but its nonreal estate loan portfolio grew 13.2 percent.

The recent growth in farm loan demand experienced by commercial banks is reflected in loan-to-deposit ratios. Average loan-to-deposit ratios grew to 64.0 percent for agricultural banks in the year ending September 30, 1994, from 60.0 percent a year earlier and 58.0 percent 2 years earlier. The loan-to-deposit ratio has increased from a low

of 53.5 percent in 1987, but the current ratio remains below the high of 68.2 percent recorded in September 1968.

Regional changes are significant for areas affected by weather problems in 1993. Average loan-to-deposit ratios reported by the Federal Reserve System for agricultural banks increased during the year ending September 30, 1994, for all eight of the reporting Federal Reserve districts. But the changes from September 1992-September 1994 show significant increases for the following districts: Minneapolis (61.1 to 70.2), Kansas City (53.9 to 61.8), Chicago (59.7 to 65.8), St. Louis (60.8 to 65.7), and Dallas (45.5 to 50.3). The Minneapolis and Kansas City ratios are the highest in a decade and the Chicago ratio is the highest since 1980. In 1994, the Kansas City district's farm loan demand index edged up to its highest level in 15 years.

Firming the farm loan demand in recent quarters and increasing farm loan-to-deposit ratios at agricultural banks would appear to have taken much of the slack out of the lending system regarding farm loans. But this has not generally been the case. Lenders report that the competition for high-quality farm loans remains high. The increased volume of farm loan volume from commercial banks generally has succeeded in raising loan-to-deposit ratios to more desired levels following several years of bankers' complaints that their ratios were too low. Recent changes in loan-to-deposit ratios not only reflect growth in loan demand, but a slower growth rate in deposits as bank customers have taken advantage of alternative investment options when faced with low bank interest rates on deposit accounts. In rare cases, future gains in loan volume may be constrained unless banks acquire deposits at a faster pace. However, overall adequate funds are available from banks for agricultural loans, with few banks reporting a shortage of loanable funds.

Farm Debt Increasing in Response to Greater Demand

The expected 3-percent rise in farm business debt in 1995 will be the fifth annual increase in the last 6 years after 5 successive years of net debt retirement. On a calendar year basis, outstanding loan volume for all lenders increased last year, except for the CFSA. Commercial banks experienced a 7.4-percent increase in real estate lending in 1994, marking the twelfth consecutive year of gains. Some of the increase is due to continued stringent loan underwriting requirements implemented during the farm financial crisis of the mid-1980's. There also has been increased use of revolving lines of credit backed by real estate.

Total farm business debt is anticipated to rise to about \$152 billion by the end of 1995, the highest total since 1986. The expected increase of \$3-4 billion during 1995 will be the third straight year of rising debt and follows an increase of \$6.2 billion in 1994. The 4.3-percent increase in 1994 is the largest annual percentage gain in outstanding loans since 1981 and places the debt level about \$9.4 billion above years earlier. In percentage terms, however, the increases of 1992-94 are small compared with those of the 1970's (appendix tables 1-3).

The recent increase in farm debt is important to watch, but not a special cause for anxiety. Total farm business debt increased 6.8 percent during 1992-94, with an 11.3-percent gain in nonreal estate debt, but only a 1.8-percent increase in real estate debt. Much of the increase in nonreal estate production loans stemmed from the major flood and drought problems experienced in 1993. By late October 1993, 739 Midwestern and 497 Southwestern and Mid-Atlantic counties had been declared as flood and drought disaster areas. Financial stress, including more loan renewals and extensions, plus a lack of set-aside requirements in 1994 contributed to the higher input use and increased financing needs.

Credit Access Is Adequate Despite the Growth in Demand

Creditworthy farmers should have access to loans in 1995, mostly from commercial banks and the FCS, the largest suppliers. Banks' loan-to-deposit ratios, despite some recent modest increases, reflect liquidity to meet increased credit needs. The FCS is offering farm customers competitive interest rates and credit arrangements in an effort to enhance loan quality and expand market share. Total life insurance company lending is expected to grow slightly in 1995.

The availability of direct CFSA loans to family-sized farmers unable to obtain credit elsewhere will be tighter in fiscal 1995. Fiscal 1995 direct Operating Loan authority, at \$500 million, is down 28.6 percent from fiscal 1994 but direct Farm Ownership authority, at \$78.1 million, remains unchanged. CFSA's authority to guarantee loans made by commercial and cooperative lenders should also be tighter in fiscal 1995. Loan guarantees totaling \$1.84 billion were issued in 1994, up 26.0 percent from 1993. Demand for loan guarantees in 1995 may moderate some from levels experienced in 1994 given more normal weather patterns. Borrowing in 1994 was influenced by the aftermath of the 1993 drought and flooding.

The outlook for 1995 indicates that competition will remain keen for high-quality farm loans. Trends in the general economy and farm lending competition are causing some

increase in interest rates, which will tend to dampen farm loan demand. Producers continue to be careful in acquiring new debt and lenders continue to carefully scrutinize the creditworthiness of borrowers. Farmers who are good credit risks will be able to acquire credit in 1995. Lenders will have adequate funds. Commercial banks continue to watch collateral requirements and emphasize borrowers' ability to repay loans from current income while operating in a more vigilant regulatory environment. Farmers will need to demonstrate adequate cash flow, and some marginal farm operators and beginning farmers will continue to face credit access problems. Some farmers in severely affected, weather-related disaster areas also may experience problems in acquiring adequate credit.

Farm Repayment Capacity Indicates No Major Lender Stress Is Anticipated

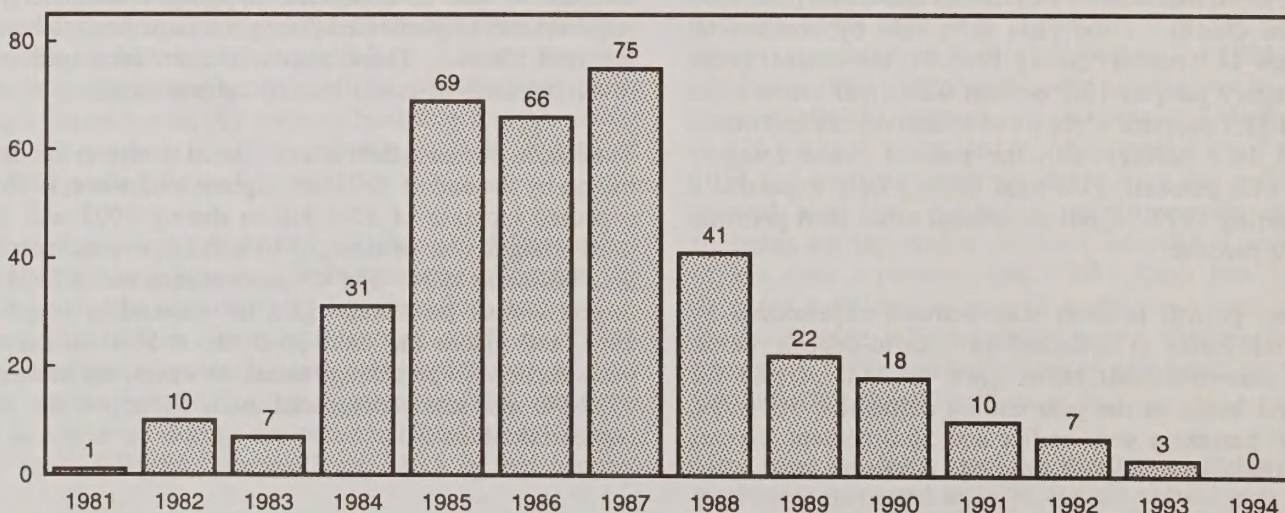
In 1995, lower income levels, larger indebtedness, and increasing interest rates indicate that a larger number of operators will have less income available to meet higher principal and interest payments on their loans. Those affected farmers may have difficulty in meeting their debt service obligations. There was a slight increase in the number of financially vulnerable farmers beginning in 1993, with their share of farms greatest in the Northern Plains, Lake States, and Corn Belt. Recent events, however, do not indicate that the farm sector is heading toward a period of renewed financial stress that would adversely affect lenders.

Farmers appear to have used the relatively robust incomes produced during 1988-92 to minimize borrowing and improve their balance sheets. But they are expected to use their repayment capacity more fully in 1995 because of lower income, rising interest rates, and increased borrowing. The farm sector is experiencing some localized financial stress, but overall the farm sector's financial status is much stronger than it was a decade ago. Farm operators most likely to face financial problems in 1995 are livestock producers and those who have not yet recovered from 1993 weather problems. Only a few farm borrowers in areas affected by the 1993 weather disasters are loaned up to their credit limits.

Figure 7

Agricultural bank failures

Number



Farmers' Use of Repayment Capacity Rises

Farmers are expected to use their credit lines more fully in 1995.

Farmers' Repayment Capacity Lower But They Still Could Manage Additional Debt

The recent rise in farm debt is a cause of concern but not alarm. Reduced income levels, with increased indebtedness, and rising interest rates suggest that a larger number of operators will have less income available to meet higher principal and interest payments on their loans. Affected farmers may experience difficulty in meeting their debt service requirements, and farmers are expected to use their available credit lines more fully in 1995.

Generally, one of the most influential criteria in lenders' evaluations of loan applicants' credit capacity is the amount of borrowers' income that is available for debt repayment. In applying debt coverage ratios to determine credit limits and maximum loan amounts, lenders effectively require that no more than 80 percent of income available for debt repayment be used for loan principal and interest payments. Lenders then use this maximum loan payment to determine the maximum loan that the borrower qualifies for, given the appropriate loan term and the current market interest rate.

Considering the cash available (net cash income plus interest expenses) from farm operations as an appropriate proxy for income available for debt repayment, ERS research has analyzed farm operators' use of their debt repayment capacity since 1970. Applying a debt coverage ratio to net cash income from farm operations for each year, the maximum principal and interest payment was determined. The maximum debt that could be serviced by this loan payment was estimated at prevailing market interest rates for a 7-year repayment term. This maximum debt can be thought of as the largest line of credit that the farm sector could obtain in a given year. For the actual level of farm assets, a

comparison of the actual farm debt-to-asset ratio with the maximum debt-to-asset ratio that could be supported by the available income provides insight into farmers' use of credit capacity.

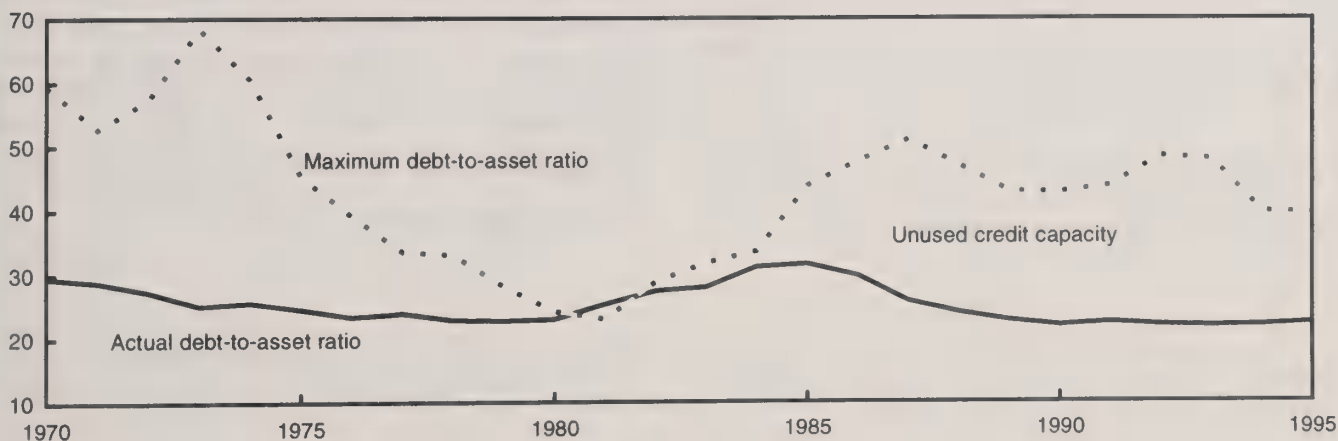
Results of this research indicate that farm operators rapidly exhausted their debt repayment capacity during the late 1970's. In 1980-1982, the actual debt owed exceeded the amount that operators could service with the income their farms were then producing. While this was partially due to prevailing high interest rates, those farm operators who borrowed to expand found themselves saddled with a critical mass of excessive debt. This problem farm debt worked itself out during the loan restructuring that took place over the remainder of the 1980's. Incomes in the mid- to late 1980's supported a higher level of debt, but, as land values declined and heavily indebted farmers experienced loan payment problems, lenders were reluctant to extend credit secured by farmland.

Entering the mid-1990's, one of the more descriptive farm sector economic indicators is derived by comparing the actual debt-to-asset ratio with the maximum debt-to-asset ratio supportable by the current level of net cash income from farm operations. While the actual farm operator debt-to-asset ratio does not appear to be rising dramatically, the maximum debt-to-asset ratio that could be supported from current cash income is expected to remain below 40 percent during 1995. This is the lowest level for this measure since 1984. This suggests that while farmers, in total, appear to have the capability to safely acquire additional debt, they will probably not dramatically increase their borrowing activities because they have lower income available to service debt.

Figure 8

Farm borrowing is below estimated credit limits 1/

Percent



1/ Values for 1994 and 1995 are forecasts.

Farm Loan Rates Increased Throughout 1994

Farm loan rates are expected to continue trending upward in 1995.

Situation: 1994

Interest rates on new farm loans made by institutional lenders increased throughout 1994, reversing a downward trend that began in the early 1980's (figure 9). Annual interest rates on new nonreal estate farm loans increased 20 basis points for commercial banks and 14 basis points for FCS lenders. Increases are even more pronounced when comparing fourth-quarter averages in 1993 with those for 1994 (appendix table 4). The premium between farm nonreal estate loan rates and the prime rate has been trending downwards since the mid-1980's. This narrowing in the cost of funds between farm and nonfarm borrowers has been influenced by greater competition among agricultural lenders and a healthier farm economy that has reduced the credit risk premium in farm lending rates.

Average interest rates on new real estate loans increased across all categories of farm lenders as well (appendix table 5). Again, the increases are especially pronounced when comparing fourth-quarter averages for 1993 with those for 1994. Real estate farm loans in 1994 were priced almost a full percent above the U.S. T-bond rate. The U.S. T-bond rate is a composite series similar in term to farm real estate loans.

The upward trend in farm interest rates during 1994 reflects activity outside of the farm sector, especially the Fed's tighter monetary policy in response to fears of an increase in future inflation rates. A tighter monetary policy attempts to slow economic growth and reduce inflationary pressures that are generated when there is little excess capacity in labor and capital markets. Such a situation is presently evidenced by a civilian unemployment rate that remains well below 6 percent and an increase in the U.S. manufacturing capacity utilization rate to its highest level (85.1 percent) since 1979.

Agriculture will continue to compete for loanable funds against growing demand from the nonagricultural business sector. Nonfarm nonfinancial firm debt grew at an annual rate of 4.7 percent in the first three quarters of 1994, in contrast to a 2.1-percent rate in 1993. Nonfarm business credit demand is expected to accelerate in 1995 as business investment remains strong but growth in corporate profits slows.

Treasury rates are important to any discussion of the farm economy because farm interest rates follow trends in major financial market rates. Tighter monetary policy, stronger

domestic credit demand from business and consumers, and rising world real interest rates pushed up U.S. Treasury interest rates for all maturities. The nominal yield on 30-year T-bonds rose to 7.9 percent by late December, compared with 6.4 percent at the beginning of 1994. At the short end of the yield curve, the real 3-month T-bill rate (measured by the 3-month T-bill rate minus the inflation rate over the previous 12 months) increased from 0.3 percent in the beginning of 1994 to 2.8 percent by the end of December.

Outlook: 1995

Major financial market interest rates are expected to continue their upward climb throughout 1995, slowing in the latter half of the year. The largest increases are expected in the shorter-term rates. Mirroring this trend, agricultural loan rates are expected to increase to a lesser extent, due to the relatively more stable cost of funds at agricultural financial institutions. Rates at small, rural agricultural banks are expected to increase less than rates at large urban banks.

Impacts on Farm Lenders

Increases in interest rates affect lenders' costs, which are then passed on to farmer-borrowers on both new and outstanding farm loans. The majority of farm loans are made with variable interest rates. As general interest rates increase, interest rates on outstanding variable rate loans increase when their repricing dates arrive. While this protects the market value of variable rate loans, the increase in market interest rates negatively affects the market value of a lender's outstanding fixed rate loans. In addition, the recent increases in interest rates combined with expectations of future increases, should they occur, will have a negative impact on the future repayment capacity of some farm borrowers, reducing or even reversing some of the recent improvements in the asset quality of the farm financial sector (figure 10).

Farm lenders price their new loans on a combination of their average and marginal cost of funds. Large commercial banks and life insurance companies place a greater reliance on marginal cost pricing in contrast to small rural banks and FCS lenders. Thus, larger lenders will reflect increases in their cost of funds sooner and to a larger extent than smaller, rural lenders. However, the interest risk management practices of the large institutional lenders may reduce their need to protect profit margins by passing increases in their cost of funds to farmers.

Figure 9

Selected interest rates, selected years

Percent

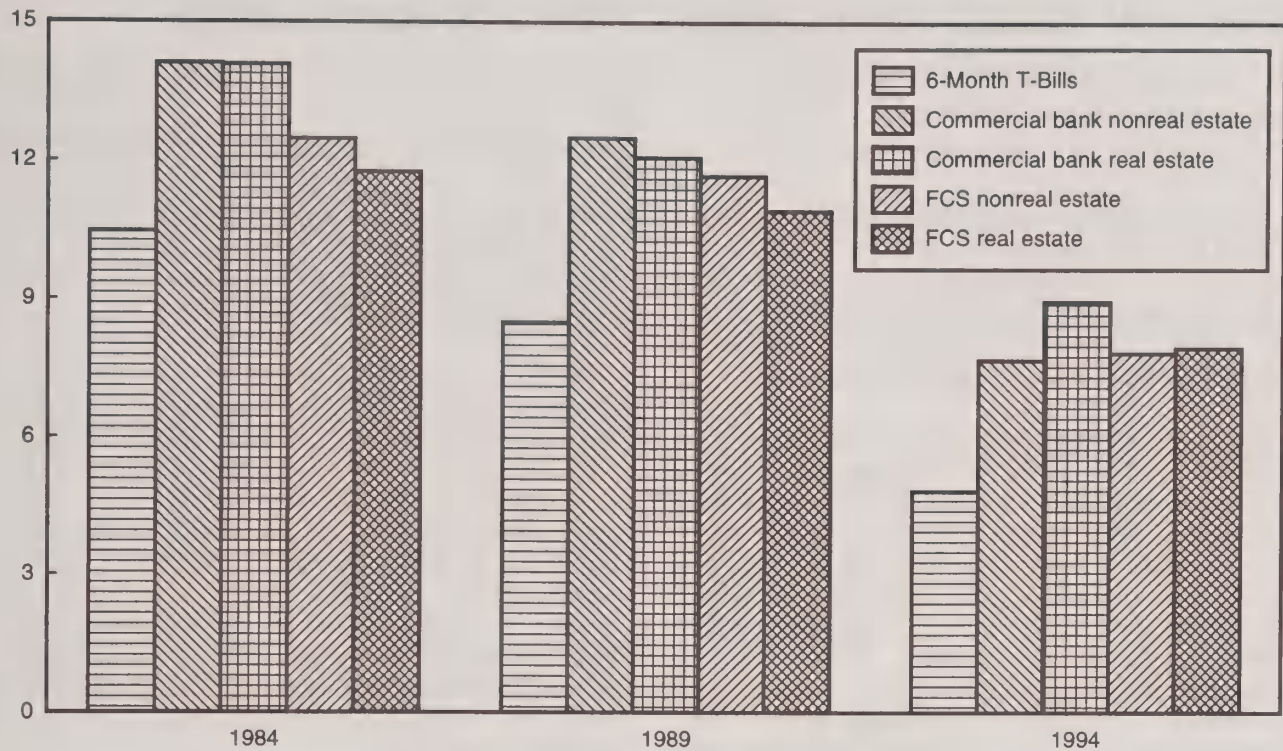


Figure 10

Interest expenses as a share of net cash available declined but remain above those experienced prior to 1975

Percent



Commercial Banks Hold Largest Share of Farm Loans

Farm business debt increased 4.3 percent in 1994 and rose in 4 of the last 5 years. It is now 7.9 percent above the 1989 low.

The distribution of the farm sector's \$148.1 billion total farm business debt held on December 31, 1994, is summarized in table 1. Commercial banks account for 40.0 percent of all farm loans, making them the leading agricultural lender, followed by the FCS with 24.5 percent. Individuals and others are estimated to hold 21.9 percent of the total.

Despite the recent increases, total farm business debt at the end of 1994 was \$45.7 billion (or 23.6 percent) below its 1984 peak (appendix table 1). Real estate farm business debt in 1994 was 27.6 percent below its 1984 peak and nonreal estate farm business debt was 19.4 percent lower than its 1983 high (appendix tables 2 and 3). The overall paydown in the farm loan portfolio appears to have been driven more by demand than supply. For a variety of reasons, farmers decided to hold less debt. Large amounts of debt and relatively high interest rates made debt servicing a costly item in the early 1980's. By 1987-90, interest rates were lower, farm income was stronger, asset values were stable, and debt was down.

The farm sector entering 1995 is more cost-efficient and better capitalized except for scattered areas affected by earlier severe weather problems. Since the 1989 low, farmers have slowly added to their debt with total debt increasing only 7.9 percent by 1994. Total nonreal estate debt has been growing since its 1988 low, with a 14.7-percent increase through 1994. Real estate debt has increased only 4.2 percent since its 1990 low.

Commercial Banks Continue To Increase Market Share

Since 1981, when their market share was 21.3 percent, commercial banks increased their market share of farm loans for 13 straight years to 40 percent in 1994 (appendix table 1). Much of this shift occurred at the expense of the FCS, whose market share has trended downward, declining from a high of 34 percent in 1982 to 24.5 percent in 1994. Total CFSA market share also has decreased sharply--from 16.3 percent in 1987 to 7.5 percent in 1994. The commercial bank farm loan portfolio grew 44.1 percent during 1987-94 while the FCS portfolio decreased 43.4 percent over the 1982-94 period. CFSA loans outstanding dropped 54.9 percent during 1985-94.

Within the real estate debt portfolio, the value of outstanding real estate loans held by commercial banks has increased 178 percent from its 1982 low, while FCS loans have decreased 47.1 percent from their 1984 high (appendix table 2). Some of the bank increase resulted from higher loan collateral requirements in the wake of the 1980's farm financial crisis rather than from new land loans. Collateral requirements can shift production loans into the real estate category. In the

1980's, farm lenders have made a transition from their earlier collateral-based lending. Lenders, operating in a stricter regulatory environment, now emphasize borrowers' ability to repay loans from current income.

A number of important changes have occurred in the nonreal estate portfolios of the major farm lenders (appendix table 3). By the end of 1988, FCS nonreal estate loans had declined 58.8 percent from their 1981 peak, but they subsequently increased 33.6 percent during 1987-94. At the end of 1987, commercial bank loans had decreased 26.7 percent from their top figure in 1984, but they subsequently increased 38.6 percent during 1987-94. CFSA nonreal estate loans decreased 61.4 percent during 1985-94, falling continuously over this period. In 1994, the FCS held 16.5 percent and commercial banks held 54.0 percent of total nonreal estate debt. The comparable figures in 1981 were 25.4 and 37.3 percent, respectively.

Delinquencies and Chargeoffs Continue at Low Levels Except for CFSA

During 1985-94 CFSA had the highest delinquencies in both dollars and share of the portfolio (table 2). The value of delinquent loans peaked for commercial banks in 1985 and for the FCS and life insurance companies in 1986. Delinquencies as a percentage of outstanding farm loans peaked in 1986 for all lenders except CFSA, where they peaked in 1988.

A key concern of farm lenders is the amount of loan losses they must absorb. Losses for commercial banks, FCS, and CFSA for 1984-94 are shown in table 3. During 1985-89, agricultural loan chargeoffs by these lenders totaled \$13.8 billion. The varying pattern of losses reflects institutional, accounting, and regulatory differences. Commercial banks tend to focus on farm production loans, where problems surfaced more quickly than for the farm mortgages that dominate FCS's loan portfolio. Moreover, until 1985 the FCS tended to extend more loan forbearance than commercial banks.

CFSA exercised liberal loan foreclosure forbearance until 1987, which caused the agency to report low farm loan losses. CFSA's policy of considerable forbearance continued until then because foreclosure activities were restricted by Congress and the courts. The outcome was low reported loan losses, but an accumulating amount of delinquent loans. Beginning in fiscal 1987, CFSA began to resolve more vigorously the delinquent loan volume that accumulated during the 1980's. The Agricultural Credit Act of 1987 gave CFSA extensive guidelines to resolve its problem loan portfolio.

Table 1—Distribution of farm business debt, by lender, December 31, 1994 1/

Lender	Type of debt		Total
	Real estate	Nonreal estate	
		<i>Percent of total</i>	
Commercial banks	14.2	25.8	40.0
Farm Credit System	16.6	7.9	24.5
Cons. Farm Service Agency	3.6	3.8	7.4
Life insurance companies	6.1	---	6.1
Individuals and others	11.6	10.3	21.9
Commodity Credit Corporation	0	---	2/
Total	52.2	47.8	100.0

1/ Preliminary. Due to rounding some subcategories may not add to totals. 2/ This excludes CCC crop loans which are estimated at \$4 billion at the end of calendar 1994.

Table 2—Delinquent farm loans, by lender, 1985-94

Lender	Yearend 1/									Mid-year 1994 2/
	1985	1986	1987	1988	1989	1990	1991	1992	1993	
Billion dollars										
Commercial banks 3/ 4/	2.6	2.2	1.4	1.0	0.7	0.6	0.7	0.6	0.5	0.6
Farm Credit System 5/	5.0	7.0	5.2	3.3	2.5	2.5	2.2	1.9	1.5	1.3
Life insurance companies 6/	1.7	1.8	1.3	.8	.4	.4	.4	.3	.2	.3
Cons. Farm Service Agency 7/	11.9	12.0	11.8	12.5	11.1	8.1	7.3	6.6	5.8	4.4
Percentage of outstanding loans										
Commercial banks 3/ 4/	7.3	7.0	4.8	3.3	2.3	1.9	1.9	1.8	1.4	1.5
Farm Credit System 5/	8.0	13.8	11.8	8.0	6.1	6.1	5.4	4.6	3.6	3.1
Life insurance companies 6/	15.1	17.0	14.3	8.9	4.7	4.2	3.8	3.3	2.2	3.8
Cons. Farm Service Agency 7/	41.5	42.9	45.8	49.8	47.8	41.3	41.7	42.5	41.0	34.8

1/ End of fiscal year (Sept. 30) for the Consolidated Farm Service Agency (CFSA) and end of the calendar year (Dec. 31) for the other lenders. 2/ June 30 except for CFSA. 3/ Delinquencies were reported by institutions holding most of the farm loans in this lender group. Data shown are obtained by assuming that the remaining institutions in the group experienced the same delinquency rate. 4/ Farm nonreal estate loans past due 90 days or more or in nonaccrual status, from the Reports of Condition submitted by insured commercial banks. 5/ Data shown are nonaccrual loans and exclude loans of the Bank for Cooperatives. 6/ Loans with interest in arrears more than 90 days. 7/ Prior to 1988 a loan was delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a loan is delinquent if a payment is more than 30 days past due. Data shown are for September 30; thus, they avoid the yearend seasonal peak in very short-term delinquencies and so are more comparable with those shown for other lenders. The CFSA data reflect the total outstanding amount of the loans that are delinquent (as do the data shown for other lenders), rather than the smaller amount of delinquent payments that is often reported as CFSA "delinquencies."

Table 3—Farm loan losses (net chargeoffs), by lender, 1984-94

Year	Commercial banks 1/	Farm Credit System 2/	Cons. Farm Service Agency 3/	Exhibit: Life insurance company foreclosures 4/
<i>Million dollars (Percent of loans outstanding at end of period) 5/</i>				
1984	900 (2.3)	428 (0.5)	128 (0.5)	289 (2.5)
1985	1,300 (3.3)	1,105 (1.6)	257 (0.9)	530 (4.8)
1986	1,195 (3.4)	1,321 (2.3)	434 (1.5)	827 (7.9)
1987	503 (1.6)	488 (0.9)	1,199 (4.3)	692 (7.5)
1988	128 (0.4)	413 (0.8)	2,113 (8.4)	364 (4.0)
1989	91 (0.3)	(5) (0.0) 6/	3,297 (12.4)	204 (2.3)
1990	51 (0.2)	21 (0.04)	3,199 (13.5)	85 (0.9)
1991	105 (0.3)	47 (0.09)	2,289 (10.4)	95 (1.0)
1992	82 (0.2)	19 (0.04)	1,887 (9.1)	148 (1.8)
1993	54 (0.2)	(2) (0.0) 6/	1,768 (9.4)	96 (1.1)
1994 7/	30 (0.1) 8/	(5) (0.0) 6/	1,346 (7.5)	18 (0.2)

NA= Not available. 1/ Calendar year data for nonreal estate loans. 2/ Calendar year data. 3/ Fiscal year data beginning October 1. Includes data on the insured (direct) and guaranteed farm loan programs. 4/ Loan charge-off data are not available for life insurance companies. 5/ Loan loss data rounded to nearest million dollars. 6/ A gain of less than 0.01 percent. 7/ Commercial bank data through June 30, 1992, and Farm Credit System and life insurance company data through September 30, 1992. 8/ Less than 0.05 percent.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, The Farm Credit Council, and the Consolidated Farm Service Agency.

Agricultural Banks Remain Highly Profitable

Farm banks have significantly reduced their delinquent loan portfolio.

Agricultural banks were very profitable in 1994, but not quite up to their record 1993 performance. Low loan loss provisions and good interest rate spreads supported large profits for agricultural lenders. An annualized mid-1994 rate of return on assets (ROA) of 1.2 percent matched the strong 1993 average (table 6). Return on equity capital (ROE) declined to 12.4 percent, trailing 1993's high 12.8 percent but well above a few years earlier.

Continued strength in ROA reflects increasing loan quality in farm bank loan portfolios. Loans in nonperforming status at midyear dropped to 1.1 percent of total loans (table 4), surpassing the industrywide rate of 1.6 percent (appendix table 6). As measured by both ROA and loan quality, agricultural banks also outperformed the small nonagricultural banks to which they are often compared.

As farmers continue to slowly assume more debt, the increasing share of farm debt captured by commercial banks helped raise loan-to-deposit ratios at agricultural banks from 58.1 to 62.1 percent over the past year. Since this is an average, higher loan ratios at some small banks may lead their managers to consider slowing lending activity. But several surveys suggest that most agricultural bankers have the capacity and willingness to extend additional farm credit.

What Is an Agricultural Bank?

The Board of Governors of the Federal Reserve System (FRB) classifies banks as agricultural if their ratios of farm loans to total loans exceed the unweighted average of the ratio at all banks on a given date; 17.42 percent on June 30, 1994 (table 5). The Federal Deposit Insurance Corporation (FDIC) criterion is a constant 25 percent ratio of agricultural loans to total loans. Unless otherwise indicated, the FRB agricultural bank definition is used throughout this report. Most farm banks retain much larger agricultural shares in their loan portfolios and therefore remain sensitive to conditions in the agricultural sector of the economy. Farm loans averaged 38 percent of total loans at all farm banks in 1994, and reached 49 percent for farm banks with below \$25 million in assets (table 7).

Since outstanding bank farm loans typically peak in the summer and decline the rest of the year as production loans are paid down, the use of June data for 1994 (rather than end of year) in table 5 distorts recent trends in the number of agricultural banks. For the 6 months ending June 30, 1994, farm banks declined by only 34 to 3,689 using the FRB definition and actually increased by 7 to 2,954 using the FDIC definition. Comparing June 1994 to June 1993 (not shown in the table) shows much larger declines under both definitions; 130 fewer FRB farm banks and a drop of 66 following FDIC's approach to counting agricultural banks.

The trend toward fewer agricultural banks reflects a decline in farm lending relative to total loans, but the drop in banks over the last decade due to mergers and failures is a stronger factor.

Farm Loan Quality Continues To Improve

Farm loan quality continued to improve through the first half of 1994. Only 1.5 percent of commercial bank agricultural production loans were delinquent. Renegotiated and performing loans amounted to only 0.4 percent of production loans. Farm loan quality at agricultural banks exceeded that for commercial banks overall with only 1.4 percent of agricultural bank farm production loans in nonperforming status.

Net chargeoffs of farm production loans grew to \$30 million (table 3) at all commercial banks in the first 6 months of 1994 from \$23 million in first-half 1993 (not shown), but this number remains negligible relative to outstanding loans and to chargeoffs observed during the farm crisis of the mid-1980's. Loan loss provisions fell to 0.2 percent, reflecting management's increasingly positive outlook for future loss rates (table 6).

Profitability Approaches 1993 Results

Agricultural bank profits were near 1993 levels, with ROA at 1.2 percent and an overall rate of return on equity (ROE) of 12.4 percent, both annualized from midyear figures. ROE for small nonagricultural banks slightly exceeded the midyear ROE for agricultural banks, but trailed agricultural banks in ROA with a ratio of 1.1 percent. Both bank types increased their average capital-to-asset ratio during 1994, further increasing their solvency.

Agricultural banks' loan-to-deposit ratios increased to 62.1 percent, compared with 67.4 percent at small nonagricultural banks. The ratio of loans to assets, 53.6 percent at agricultural banks and 58.0 percent at small nonagricultural banks, reveals the relative bank liquidity of these two groups. Both are highly liquid and eager to make additional loans, but expect loan demand to remain stable.

No agricultural banks failed in 1994 (appendix table 8), compared with three a year earlier. This reflects continued improvement in farm bank loan quality and wide net interest margins, but also follows national trends of a solid recovery in the banking industry. Total nonagricultural bank failures dropped to 11 in 1994 from 33 in 1993. Only 3 agricultural banks and 24 nonfarm banks were categorized as weak at midyear, compared to 2 and 30, respectively, at the end of 1993 (appendix table 7).

Strong profits, continued improvements in loan quality, and lowered expectations for future loss rates allowed commercial banks to further reduce loan loss provisions.

Table 4—Nonperforming loans as a percentage of total loans, by type of bank, 1986-94 1/

Type of bank	1986	1987	1988	1989	1990	1991	1992	1993	1994
	<i>Percent</i>								
Agricultural									
Total nonperforming 2/	4.7	3.8	2.7	2.3	2.0	1.9	1.8	1.4	1.1
Past due 90 days 3/	1.6	1.2	.8	.7	.6	.6	.6	.4	.4
Nonaccrual	3.1	2.6	1.9	1.5	1.3	1.3	1.2	1.0	.7
Small nonagricultural 4/									
Total nonperforming 2/	2.6	2.5	2.2	2.1	2.0	2.3	2.0	1.7	1.3
Past due 90 days 3/	1.0	.8	.7	.7	.6	.7	.5	.4	.3
Nonaccrual	1.6	1.7	1.5	1.4	1.4	1.6	1.5	1.3	1.0

1/ Data are weighted by bank asset size using month-end June balances. 2/ Columns may not equal totals due to rounding. 3/ Still accruing interest. 4/ Banks with less than \$500 million in assets which were not agricultural by the Federal Reserve Board definition.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 5—Number of agricultural banks, by definition, 1986-94 1/

Item	1986	1987	1988	1989	1990	1991	1992	1993	1994 2/
Commercial banks (Number)	14,008	13,505	12,961	12,635	12,270	11,849	11,400	10,917	10,675
FRB Agricultural banks (Number)	4,704	4,480	4,337	4,180	4,067	3,952	3,851	3,723	3,689
FRB farm loan ratio (Percent)	15.78	15.60	15.73	15.84	15.94	16.57	16.73	17.04	17.42
FDIC Agricultural banks (Number)	3,516	3,335	3,236	3,172	3,090	3,116	3,019	2,947	2,954

1/ Includes domestically chartered, FDIC-insured commercial banks with deposits, assets, and loans. 2/ 1994 figures are for June 30, all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System (FRB).

Table 6—Selected bank performance measures, by type of bank, 1986-94 1/

Performance measure	1986	1987	1988	1989	1990	1991	1992	1993	1994 2/
	<i>Percent</i>								
Rate of return on equity capital									
Agricultural banks	5.1	7.6	10.0	10.7	10.7	11.4	13.1	12.8	12.4
Nonag small banks	8.3	8.1	8.7	10.1	8.5	9.1	12.0	12.9	12.6
Rate of return on assets									
Agricultural banks	.4	.7	.9	1.0	1.0	1.0	1.2	1.2	1.2
Nonag small banks	.6	.6	.7	.8	.7	.7	1.0	1.1	1.1
Provisions for loan losses as a percentage of loans									
Agricultural banks	2.4	1.4	.8	.7	.5	.5	.4	.3	.2
Nonag small banks	1.3	1.0	.9	.8	1.0	1.0	.8	.5	.4
Capital as a percentage of assets									
Agricultural banks	9.5	9.8	10.0	10.1	9.9	10.1	10.4	10.9	11.1
Nonag small banks	8.4	8.8	8.8	9.0	9.0	9.2	9.6	10.1	10.2

1/ Rate of return on equity is net income after taxes as a percentage of the average of total equity capital at the beginning and end of the year. Rate of return on total assets is net income after taxes as a percentage of total assets on December 31. 2/ 1994 ratios are June 30 data, annualized.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Small Agricultural Banks Are the Biggest Farm Lenders

Agricultural banks with assets up to \$300 million hold over half of all commercial bank farm loans, but nonagricultural bank shares increased slightly.

Both agricultural and nonagricultural bank groups increased the total value of their farm lending portfolios by substantial amounts. Agricultural banks reported a \$2.9-billion increase. The \$2.4 billion gain over 1993 for nonagricultural banks left them with 43.8 percent of commercial bank farm loans (table 7), a 0.1-percent increase from the previous year.

The largest size class of nonagricultural banks holds one-quarter of all commercial bank farm debt (table 7). With less than 20 percent of this debt, the other nonagricultural bank classes trail the combined 24.9 percent market share of the two smallest classes of agricultural banks.

Solvency Measures Look Good For All Bank Groups

Bank capital reduces the risk of bank failure by cushioning losses and supports liquidity by maintaining borrower confidence. Capital-to-asset ratios for midyear 1994 show that commercial banks -- regardless of size -- are solvent (table 8). Small commercial banks had capital-to-asset ratios between 10.6 and 11.8 percent, compared to around 10 percent for the three largest bank categories. A narrower measure, the ratio of equity capital to assets, averaged 10.8 percent of assets for the smallest banks but only 7.2 percent for the highly leveraged large banks.

Loan-to-deposit ratios suggest that small commercial banks are more liquid than larger banks. However, nondeposit funding sources and secondary markets for loan sales have weakened the loan-to-deposit ratio's traditional role as a liquidity measure. Some banks hold more loans, resulting in higher loan-to-deposit ratios. Other banks reduce risk and their loan-to-deposit ratios by selling loans and acquiring securities instead. Large banks use nondeposit sources of loanable funds liberally, as witnessed by their much lower value of deposits as a percentage of liabilities (table 8).

Largest Banks Most Profitable

Large banks lend a greater percentage of their asset base, but they typically earn lower rates of return on those assets (ROA) than do smaller banks. However, in the first part of 1994 the smallest banks registered the lowest ROA and the best result came from banks with \$300-\$500 million in assets. Large banks improved their profitability in part by getting a handle on past real estate problems. As of June 30, 1994, 2.6 percent of big bank real estate loans were nonperforming (appendix table 6), down from 4.1 percent a year earlier. Rate of return on equity (ROE) increased uniformly with bank size (table 9), helped by greater leverage in the larger banks.

The smallest banks, those with \$25 million or less in assets, include 1,351 agricultural banks and 781 nonagricultural

banks (table 7). The smallest agricultural banks provided about 10 percent of commercial bank loans to agriculture. Agricultural banks achieved an average annualized ROA of 1.25 percent and ROE of 12.36 percent. Agricultural banks with less than \$25 million in assets earned an ROA of 1.13 percent, within 0.01 percent of all nonagricultural bank size classes except those with \$300 to \$500 million in assets, which achieved an ROA of 1.22 percent.

Current Banking Issues

Interstate banking and branching legislation was signed by the President in 1994. Bank holding companies as of September 1995 may purchase, and operate as separate bank affiliates, banks in all States. Most States already permit interstate banking to some extent, but the Federal legislation eliminates State requirements on reciprocity and location of the acquiring holding company. Interstate branching through bank mergers is permitted beginning in June 1997. States may pass legislation to opt out of interstate branching. While interstate banking will increase the pace of bank consolidation, agricultural banks are typically too small to attract attention from the mostly large banks that will actively participate in interstate banking. Further, independent banks have competed successfully in New York and other States with substantial intrastate branching.

Federal bank supervisory agencies plan to revise Community Reinvestment Act (CRA) regulations to simplify compliance and to encourage lending to underserved areas. The November 1994 draft regulations specify streamlined CRA exams for banks with less than \$250 million in assets (which includes most agricultural banks). Larger banks must provide new agriculture and small business lending data. Since these data will be reported separately for a bank's rural market areas, the rural offices of larger banks will face scrutiny that may encourage increased rural lending.

The 1995 session of Congress will address a variety of banking issues, some of which received recent attention in 1994 or earlier. The Glass-Steagall Act, which limits bank activity in the insurance and securities industries, may well come under closer scrutiny. A compromise proposal to consolidate some of the Federal agencies that regulate financial institutions may reappear in 1995.

The banking industry is way ahead of thrifts in achieving mandated levels of reserves in their respective deposit insurance funds. Banks are expected to gain a competitive advantage in 1995 through lower deposit insurance premiums and will oppose attempts to resolve this dilemma by merging the two insurance funds. Banks fought a 1994 Farm Credit System proposal to gain expanded powers for its members and will do so again in 1995.

Small agricultural banks still hold the majority of farm loans, despite the declining number of agricultural banks.

Table 7—Agricultural lending of agricultural and nonagricultural banks, by bank size, June 30, 1994 1/

Total assets	Agricultural banks					Nonagricultural banks				
	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans
Million dollars	Number	---Million dollars---		-----Percent-----		Number	---Million dollars---		-----Percent-----	
Under 25	1,351	5,540	4.1	9.0	49.3	781	377	.5	.6	5.3
25 - 50	1,213	9,781	8.1	15.9	42.6	1,495	1,327	.9	2.2	4.3
50 - 100	830	11,098	13.4	18.0	37.2	1,861	2,784	1.5	4.5	3.7
100 - 300	278	6,935	24.9	11.3	32.1	1,849	5,303	2.9	8.6	3.0
300 - 500	12	650	54.1	1.1	25.3	369	1,739	4.7	2.8	2.0
Over 500	5	552	110.3	.9	20.5	631	15,413	24.4	25.1	.9
Total	3,689	34,556	9.4	56.2	38.0	6,986	26,944	3.9	43.8	1.3

1/ Figures are weighted within size class. 2/ This represents the percentage of total commercial bank agricultural loans held by this size group of banks.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 8—Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 1994 1/

Total assets	Banks	Capital/asset 2/	Equity/asset	Loan/deposit	Loan/asset	Deposit/liability
Million dollars	Number	-----Percent-----				
Under 25	2,132	11.8	10.8	60.7	52.9	97.6
25 - 50	2,708	10.9	9.9	62.3	54.6	97.4
50 - 100	2,691	10.6	9.6	63.4	55.3	96.2
100 - 300	2,127	10.1	9.0	66.8	57.4	94.6
300 - 500	381	10.1	8.7	73.1	61.0	91.5
Over 500	636	10.1	7.2	85.5	57.3	72.4
Total	10,675	10.2	7.7	80.6	57.2	77.1

1/ Weighted average within size class. 2/ Total capital includes equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 9—Selected commercial bank profitability and efficiency measures, by bank size, June 30, 1994 1/

Total assets	Return on assets 2/	Return on equity 3/	Asset utilization 4/	Noninterest income to total income	Interest expense to total expense	Interest expense to interest income
Million dollars			Percent			
Under 25	1.03	9.52	7.72	12.43	41.01	37.32
25 - 50	1.12	11.28	7.64	11.18	42.92	37.45
50 - 100	1.18	12.24	7.76	12.88	42.78	37.59
100 - 300	1.15	12.66	7.93	15.30	40.86	36.83
300 - 500	1.22	13.85	8.06	15.86	41.30	36.33
Over 500	1.14	15.33	8.43	24.96	43.59	44.21
Total	1.14	14.59	8.31	22.82	43.20	42.61

1/ All ratios are on an annualized basis and weighted within class size. 2/ Rate of return on assets is net income after taxes as a percentage of total assets. 3/ Rate of return on equity is net income after taxes as a percentage of total equity. 4/ Asset utilization is gross income as a percentage of total assets.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Farm Credit System Profits Fall, but Capital Building Continues

The Farm Credit System's profits and market share fall and loan volume growth remains sluggish, but the System's capital position continues to improve. New safeguards are adopted by banks amid continued restructuring.

The Farm Credit System (FCS) entered 1995 in strong financial condition. Loan volume and loan portfolio quality have improved. Earnings are down from last year, but earnings quality remains strong and capital levels continue to rise. Nonperforming assets continue to decline despite 1993's adverse weather and 1994's low prices for livestock and some other major commodities.

FCS income surpassed \$1 billion for calendar 1993 and will approach this level again for 1994 (table 11). However, net income before extraordinary items was down 12 percent for the first 9 months of 1994. After accounting for extraordinary items, the change in net income was 21 percent. The 1994 results also reflect a \$48-million charge associated with restructurings and merger implementations. The 1993 results were substantially affected by two, one-time accounting changes: a gain of \$135 million from a change in accounting for income taxes and a charge of \$32 million (net of taxes) from a change in accounting for post-retirement benefits other than pensions.

Since 1990, net income has been dominated by solid operating results led by strong performance in net interest income, and net income in 1994 remained solid. However, net interest income fell because interest rate increases on loans and a continuing decline in nonearning assets did not keep pace with increases in the cost of funds. The total annualized interest rate spread declined to 3.07 percent for the first 9 months of 1994 from 3.16 percent for the first 9 months of 1993.

After suffering substantial losses in loan volume in the mid-1980's, the FCS has experienced a nominal recovery in volume (table 10). However, loan volume continues to increase slower than the rate of inflation. Since FCS loan volume reached its low of \$50.7 billion in 1989, it has recovered to \$54.59 billion (as of September 30, 1994), up 8 percent in 5 years. During the same period inflation has totaled roughly 19 percent.

Capital adequacy has been a major regulatory concern. By September 30, 1994, FCS at-risk capital, including loss allowances and the FCS insurance fund, stood at \$10.3 billion or 18.9 percent of loans outstanding (table 12). Combined surplus capital and loss allowances now exceed the 1985 peak of \$6.9 billion when the level of loans outstanding was 28 percent higher.

Nonperforming loans (nonaccrual loans plus accrual loans over 90 days past due) continue to decline in dollar terms and as a percent of loans outstanding (table 12). Such loans stood at \$1.23 billion on September 30, 1994, 17 percent

below a year earlier. Nonperforming loans accounted for 2.25 percent of total loans outstanding.

FCS Restructuring Continues

Several events took place during the last 12 months that will affect the future of the Farm Credit System. These include additional district level mergers or merger announcements, expanded powers for the Banks for Cooperatives, and adoption of a Market Access Agreement to control access of financially troubled banks to funds from systemwide securities.

The latest round of mergers started with the St. Louis and St. Paul Farm Credit Banks (FCBs) merging to form Agribank in May 1992. Since then, the Jackson Federal Intermediate Credit Bank (FICB) merged into the Columbia Farm Credit Bank (FCB) in October 1993, the Louisville FCB merged into Agribank FCB in January 1994, the Spokane and Omaha FCB's merged to form AgAmerica FCB in March 1994, and CoBank and the Springfield FCB merged to form CoBank Agricultural Credit Bank (ACB) on January 1, 1995. In addition, the Columbia and Baltimore FCBs have announced plans to merge on April 1, 1995. If this pending merger is consummated, the number of FCS banks will have been reduced from 37 in 1987 to 8.

Despite this restructuring, the FCS has been unable to improve overall operating efficiency (last line, table 12). Overall operating costs per dollar loaned increased as the loan portfolio shrank and its quality deteriorated in the mid-1980's. Perhaps because loan volume continues to grow slower than the rate of inflation while operating expenses increase with inflation, improvements in loan quality and continued restructuring have yet to reduce per unit operating costs.

All banks and the Federal Farm Credit Banks Funding Corporation adopted a Market Access Agreement (MAA) to determine each FCS bank's worthiness for unrestricted access to financial instruments bearing joint liability. The MAA is structured to take advantage of the Contractual Interbank Performance Agreement, which was adopted by the same parties in 1991.

Two bills to expand FCS powers were introduced in Congress during 1994. The Banks for Cooperatives were successful in their bid to expand financing of U.S. agricultural exports and of foreign joint ventures of eligible U.S. agricultural cooperatives. A second initiative seeking to expand FCS authority to finance nonfarm businesses, rural homeowners, infrastructure development, and rural development authorities, was not successful.

Income fell, but loan volume increased slightly while loan quality and at-risk capital continued to improve.

Table 10—Farm Credit System loan volume, by loan type, December 31, 1988-93 and September 30, 1994

Loan Type	1988	1989	1990	1991	1992	1993	1994
<i>Billion dollars</i>							
Long-term real estate	32.18	30.24	29.42	28.77	28.66	28.46	28.54
Short and intermediate term	9.26	10.02	10.67	11.22	11.11	11.59	12.69
Loans to cooperatives	9.99	10.44	11.08	11.47	12.63	13.86	13.36
Total	51.43	50.70	51.17	51.46	52.27	53.91	54.59

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

Table 11—Farm Credit System income statement, December 31, 1988-93 and September 30, 1994

Item	1988	1989	1990	1991	1992	1993	1994
<i>Billion dollars</i>							
Total interest income	5.82	6.27	6.13	5.51	4.72	4.35	3.40
Less interest expense	-5.04	-5.26	-4.89	-3.95	-2.93	-2.39	-1.94
Net Interest Income	0.79	1.01	1.24	1.56	1.79	1.96	1.46
Less provision/plus reversal for loan losses	0.68	0.29	0.04	-0.05	-0.02	-0.04	-0.03
Less loss/plus gain on other property	-0.01	0.07	0.07	0.03	0.01	-0.00	0.00
Plus other income	0.12	0.15	0.16	0.16	0.22	0.21	0.10
Less other expense	-0.74	-0.75	-0.75	-0.79	-0.82 1/	-0.84	0.66 2/
Less debt repurchase	-0.17	0.0	-0.04	0.0	-0.04	-0.02	-0.00
Less taxes	-0.04	-0.07	-0.07	-0.09	-0.15	-0.15	-0.11
Net income	0.71	0.70	0.61	0.81	0.99	1.22 3/	0.77

1/ Includes \$.028 billion in one-time merger implementation costs associated with the Agribank merger. 2/ Includes \$.048 billion in one-time merger implementation and restructuring costs. 3/ Does not include one-time net income of \$104 million from changes in accounting for income taxes and nonpension post retirement benefits.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

Table 12—Farm Credit System financial indicators, December 31, 1988-93 and September 30, 1994

Item	1988	1989	1990	1991	1992	1993	1994
<i>Percent</i>							
At-risk capital/total loans 1/	7.64	10.52	11.95	14.09	15.91	17.87	18.87
Percent of loans in nonaccrual status or over 90 days past due	7.31	5.54	5.39	4.70	3.84	2.76	2.25
Other expense/total loans	1.43	1.47	1.46	1.53	1.51 2/	1.56	1.50 3/

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock and participation certificates, and the FCS Insurance Fund. 2/ Excludes \$.028 billion in one-time merger implementation costs. The rate would be 1.56 percent including these costs. 3/ Annualized rate excluding \$.048 billion in one-time merger implementation and restructuring costs. The rate would be 1.55 percent with merger costs.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

Farm Credit System Performance Varies Among Districts

Loan portfolio quality and at-risk capital positions improve. Net income rises in the Western and Columbia districts, but falls for all others.

As of September 30, 1994, the FCS institutions that lend directly to farmers included eight district FCB's and their related, local lending associations. Merger activity led to the loss of two district FCB's and the Federal Intermediate Credit Bank of Jackson since September 30, 1993. The system-level statistics hide differences in performance among FCS districts. This section compares the performance of the district banks and their related associations for the 9 months ending September 30, 1994, and September 30, 1993. (Comparisons are complicated by merger activity as indicated in footnotes to table 13. The most important impact is on the Columbia and Agribank districts, although the Texas district is affected as well.)

Total loan volume ranged from \$13.4 billion in the Agribank district to \$1.7 billion in the Springfield district (table 13). While aggregate loan volume increased 2 percent, most districts experienced minimal changes. Declines in loan volume occurred in the Springfield (down 0.35 percent) and Baltimore (down 3.91 percent) districts. However, reductions in nonaccrual loans accounted for 90 percent of the reduction in loan volume in the Springfield district.

Aggregate nonaccrual loans decreased 27 percent for the year ending September 30, 1994, despite adverse weather in the Midwest and Southeast. Such loans accounted for 2.76 percent of overall loan volume. No district has a ratio of nonaccrual loans to total loans exceeding 4 percent, and three districts have lowered this ratio below 2 percent. No district experienced a percentage increase in its nonaccrual loan volume. Except for Springfield and Baltimore, each district reduced nonaccrual loan volume by more than 20 percent.

Improvements in at-risk capital continue at an impressive rate. At-risk capital measures all resources that can be liquidated without impairing bondholders. Such resources include unprotected borrower stock and surplus as well as allowances for losses on loans. The all-district level of at-risk capital increased 7 percent and the all-district ratio of at-risk capital to total assets increased by nearly 4 percent.

The ratio of at-risk capital to total assets is a measure of the cushion between stockholders and bankruptcy. This ratio exceeded 16 percent for each district and averaged 18.5 percent for all districts. All districts increased their ratios of at-risk capital to assets over the year.

All-district net income before taxes and extraordinary items fell 15 percent from a year earlier for the 9 months ending September 30, 1994. The decrease was distributed unevenly among districts. Before accounting changes, extraordinary items, and taxes, net income changes ranged from a decrease of nearly 36 percent in the Texas district to an increase of almost 21 percent in the Western district.

Net income fell in all districts except Western and Columbia (figure 10). The increase in the latter district, however, probably reflects the re-affiliation to Columbia of five associations formerly serviced through the Louisville district.

Districts Experiment in Efforts To Increase Loan Volume, Reduce Costs

As noted above, overall FCS loan volume has continued to grow slower than the rate of inflation and per unit operating costs have failed to decline despite FCS restructuring. During 1994, however, both the FCA and FCS institutions implemented initiatives that may help enhance efficiency, reduce per unit operating costs, and increase loan volume. Efforts that are at least partly motivated by the desire to improve FCS efficiency include the FCA's campaign to identify and reduce regulatory burden, joint ventures among FCS entities, and several proposals to increase the range of services provided.

CoBank and AgAmerica, FCB, have established a joint venture, AgCO Service Corp., to provide data processing and management information services to those banks and AgAmerica's affiliated associations. A similar, jointly owned service corporation, Farm Credit Financial Partners (FCFP), is being established to provide support services to the direct-lending associations of the former Springfield district, which merged with CoBank on January 1, 1995. Separating FCFP from the Springfield FCB allows the affiliated associations to separate the costs of support services from lending services. Associations will now be able to buy services such as accounting, information technology, human resources, marketing, legal services, and training on an as-needed basis and better control support expenses.

Agribank and the Western FCB have also developed their own strategies. Agribank has announced an agreement with IDS Financial Services to offer financial planning services at three Farm Credit associations. IDS offers an array of financial products and services and has aggressively pursued outlets in the offices of other financial institutions. This agreement is designed to offer convenience to customers.

Western, FCB, and the Federal Agricultural Mortgage Corporation (Farmer Mac) announced a 5-year strategic alliance designed to enhance their secondary market programs. Although operated as an independent business unit, the alliance will be staffed by Western and aims to form a network of originators and sellers of agricultural mortgages. These mortgages will be pooled and guaranteed by Farmer Mac. The benefits for Western include the opportunity to attain economies of size and to diversify geographically.

Loan volume falls in the Springfield and Baltimore Districts, grows slowly elsewhere as nonaccrual loans fall dramatically. Net income jumps in the Western District, but falls elsewhere. At-risk capital position continues to improve nationwide.

Table 13—Farm Credit System district-level financial statistics

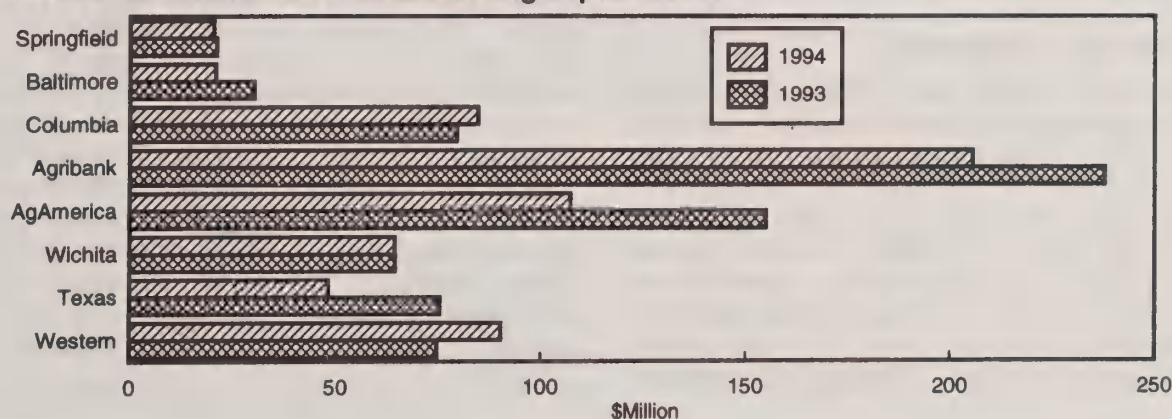
	Total loans	Nonaccrual loans	Nonaccrual loans share	Net income before taxes and extraordinary items	Income from accounting changes 1/	Total at-risk capital 2/	At-risk Capital/ assets
	\$1,000	\$1,000	Percent	\$1,000	\$1,000	\$1,000	Percent
-----Nine months ending September 30, 1994-----							
Springfield	1,742,181	50,818	2.92	20,442	0	365,202	17.02
Baltimore	3,298,003	96,875	2.94	20,887	0	604,805	16.86
Columbia 3/	5,280,201	87,482	1.66	84,697	0	1,229,966	19.16
Agribank 3/	13,470,784	406,336	3.02	205,592	0	2,751,334	17.63
AgAmerica 4/	6,755,205	250,722	3.71	107,324	39	1,314,887	18.11
Wichita	3,561,862	69,297	1.95	64,472	3,433	855,160	21.03
Texas 3/	3,778,490	61,173	1.62	48,365	0	926,897	20.91
Western	4,830,720	154,563	3.20	90,337	0	999,816	18.60
All Districts	42,717,446	1,177,266	2.76	637,089	3,472	9,051,904	18.50
-----Nine months ending September 30, 1993-----							
Springfield	1,748,229	56,340	3.22	21,129	17,565	350,936	16.65
Baltimore	3,432,069	115,618	3.37	30,228	7,180	589,846	15.81
Columbia 3/	4,736,684	112,682	2.38	79,551	2,190	1,085,102	19.05
Agribank 3/	13,417,240	549,965	4.10	237,848	18,543	2,636,670	17.45
Agamerica 4/	6,551,103	346,181	5.28	155,066	19,632	1,195,327	16.54
Wichita	3,527,947	97,488	2.76	64,618	4,591	790,271	20.37
Texas 3/	3,730,045	105,697	2.83	75,493	4,066	884,231	20.44
Western	4,786,767	232,685	4.86	74,756	10,827	905,037	17.03
All Districts	41,930,084	1,616,656	3.86	750,835	84,594	8,454,035	17.83
-----Percent change, September 30, 1993 to September 30, 1994-----							
Springfield	-0.35	-9.80	-9.49	-3.25	N/A	4.07	2.25
Baltimore	-3.91	-16.21	-12.81	-30.90	N/A	2.54	6.60
Columbia 3/	11.47	-22.36	-30.36	6.47	N/A	13.35	0.58
Agribank 3/	0.40	-26.12	-26.41	-13.56	N/A	4.35	1.06
AgAmerica 4/	3.12	-27.57	-29.76	-30.79	N/A	10.00	9.50
Wichita	0.96	-28.92	-29.59	-0.23	N/A	8.21	3.24
Texas 3/	1.30	-42.12	-42.87	-35.93	N/A	4.83	2.30
Western	0.92	-33.57	-34.18	20.84	N/A	10.47	9.20
All Districts	1.88	-27.18	-28.52	-15.15	N/A	7.07	3.76

N/A = Not Applicable. 1/ Income from accounting changes is not included in net income before taxes and extraordinary items. 2/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock. 3/ Mergers and related activity since January 1, 1993 make comparisons for the Columbia, Agribank, and Texas districts problematic. For the Texas and Columbia districts, reaffiliation of local lending associations pursuant to merger activity inflates 1994 performance relative to strictly comparable 1993 performance. For the Agribank district, reaffiliation decreases 1994 performance relative to strictly comparable 1993 performance. 4/ The former Spokane and Omaha FCBs merged on April 1, 1994 to form AgAmerica. For ease of comparison, the performance of the districts is combined for periods before the merger.

Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

Figure 11

District net income for 9 months ending September 30



Farm Credit Institutions Attain High Capital Levels

Loan loss recoveries, conversions of protected borrower stock to at-risk stock, and high net interest margins all contribute to a strong capital position.

Capital levels of the Farm Credit Banks (FCB's) and related associations have shown a marked improvement in recent years. These institutions enter 1995 with regulatory capital levels not encountered since the early 1980's (table 14). Regulatory capital includes surplus plus unprotected stock. Total reserves available to FCB's and local associations, which include regulatory capital plus loss allowances, and the Farm Credit System Insurance Corporation (FCSIC) funds exceeded 20 percent of assets as of third-quarter 1994. This is a sharp contrast to 1988 when five FCB's and combined associations reported regulatory capital at less than 5 percent of total assets.

The increase in capital levels can be traced to several factors: (1) conversion of protected stock to unprotected stock, (2) loan loss recoveries, and (3) increases in net interest margins. Prior to 1988, institutions could use borrower stock to cover bond obligations, thus potentially reducing the stock's value below par. The Agricultural Credit Act of 1987 protected the value of all outstanding borrower stock at par. This prevented borrower stock from being used to meet regulatory capital requirements and contributed to the drop in regulatory capital noted in all districts for 1988. In 1989, institutions began converting protected stock to unprotected stock, contributing to an increase in capital levels. As collateral values recovered and farm financial conditions improved in the later part of the 1980's, institutions were able to reduce loan loss allowances, thereby increasing net income and, consequently, regulatory capital. Recently, capital growth has been attributable to increased net interest margins. Between 1987 and 1993, FCB's and associations experienced increases in net interest margins primarily due to a lower cost of borrowed funds. The average interest rate paid on Systemwide Debt Securities fell from 9.34 percent in 1988 to 4.35 in 1993. Consequently, district FCB's and associations were able to increase their net interest income as a percent of average earning assets from 0.7 percent in 1987 to 3.8 percent in 1993 (fig. 12). Margins reported in all districts for 1991-94 were consistently above those reported for 1982-90. Net interest margins declined in 1994 reflecting increased interest rates in the general economy.

How Much Capital Is Adequate?

Federal regulations require that FCB's and related associations maintain regulatory capital equal to 7 percent of risk-weighted assets. With recent earnings growth, most institutions have capital far in excess of the regulatory minimum. As of the 1993, FCB's and related associations reported about \$4 billion of capital in excess of the regulatory minimum. As a percent of loan volume, excess capital ranged from 5.1 percent in the Spokane district to 14.9 percent in the Texas district (table 15). Some districts had capital in excess of twice the regulatory minimum.

Regulatory capital in excess of 14 percent of risk-weighted assets was greater than 5 percent of loans in Texas and Columbia.

In comparison with other types of financial institutions, capital for FCB's and associations may appear high. However, the System's position as a single sector lender with a high concentration in farm real estate may justify higher capital levels. Experiences from the 1980's demonstrated that the movement of capital among Farm Credit institutions within a district is limited despite risk-sharing agreements. Hence, management may be inclined to hold excess capital, especially if portfolios are concentrated among a few commodities. On the other hand, recent consolidation reduces the portfolio risk faced by individual Farm Credit institutions. In addition, the existence of the FCSIC helps prevent problems at one institution from weakening others.

High Capital Levels Carries Benefits and Costs

As a funding source, surplus and unprotected stock reduces financial risk and makes the institution less vulnerable to economic downturns. Consequently, management may be more inclined to pursue aggressive or risky marketing strategies designed to increase market share. A strong financial statement can also provide bank management with greater options. For example, mergers with other Farm Credit institutions may become more feasible. Future borrowers may benefit because the institution's financial soundness helps ensure continuity. Taxpayers benefit because the potential of future financial assistance or liquidation costs faced by the Federal Government is reduced.

On the other hand, high capital levels may cause current and past borrower/ stockholders to suffer economic losses because of the opportunity cost on these funds. These borrower/stockholders may prefer that management increase dividends and/or patronage refunds because their interest payments have contributed to the capital accumulation.

Options available to FCB management upon reaching target capital levels include lowering margins or increasing dividends. Either actions would reduce margins and encourage business expansion. Reduced margins, however, could lead to accusations of predatory pricing, that is, pricing loans at less than their cost of funds. Historically, FCB's and associations have made limited dividend payments or patronage refunds. This trend has recently changed with dividends being paid in 1993 in all except the Spokane and Omaha districts. The ability to repatriate capital to borrower/stockholders should improve FCB's competitive position because it effectively lowers the cost of funds to borrowers.

Table 14—Regulatory capital statistics, Farm Credit Banks and combined local associations, 1982-1994

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
	<i>Percent of total assets</i>												
FCS District:													
Springfield	14.4	14.9	16.7	14.6	12.8	13.5	8.9	11.6	11.3	11.8	12.6	14.3	14.7
Baltimore	13.3	14.1	14.4	13.9	12.8	14.3	10.2	13.0	12.4	12.3	13.1	14.7	15.1
Columbia	14.0	14.4	15.1	13.2	9.5	12.4	10.0	11.0	12.0	13.9	14.5	16.0	16.3
Louisville	12.8	13.8	13.9	10.7	9.6	9.7	3.9	9.2	11.1	12.5	13.3	16.4	---
Jackson 1/	13.4	14.0	13.5	8.9	5.9	---	---	---	---	---	---	---	---
Agribank 2/	12.9	13.8	14.2	9.5	5.9	6.2	4.1	6.3	8.1	10.2	13.0	14.4	14.8
Omaha 3/	12.3	12.7	12.1	7.0	5.2	3.1	2.1	3.8	4.9	6.5	9.5	13.3	13.8
Wichita	13.1	14.1	14.7	8.0	7.7	9.4	7.5	9.8	13.0	13.9	14.7	17.0	17.3
Texas	15.9	16.4	15.3	13.2	9.3	5.7	7.9	10.4	11.9	14.1	15.9	18.2	18.7
Western	12.1	12.4	12.3	10.1	6.9	6.7	3.6	5.5	8.6	10.8	12.2	14.4	15.7
Spokane	12.9	12.7	12.5	10.8	4.7	3.3	1.7	1.3	0.4	4.4	6.5	9.6	---
All districts 4/	13.1	13.7	13.8	10.3	7.5	7.7	5.6	7.8	9.3	11.1	12.8	15.0	15.5
+ allowances	14.8	15.4	15.3	14.7	13.1	13.1	9.2	10.7	12.1	14.0	15.6	17.9	18.5
+ allowances & FCSIC 5/	14.8	15.4	15.3	14.7	13.1	13.1	9.2	11.5	13.0	15.2	17.0	19.6	20.3

1/ The Jackson Federal Land Bank was liquidated in 1987. Statistics for the former Jackson FICB are reported under Columbia for 1987-94. The Texas district incorporates the portfolio of the former Jackson Federal Land Bank. 2/ Agribank was formed in 1992 through the merger of the St. Louis and St. Paul Farm Credit Banks. Louisville was subsequently merged into Agribank in 1994. Statistics reported include an aggregation of the St. Louis and St. Paul districts for 1982-93. Statistics for Louisville for 1994 are included under Agribank. 3/ Includes statistics for Spokane for 1994. 4/ Does not include the Banks for Cooperatives. 5/ FCS Insurance Fund is shared among all FCS entities including the Banks for Cooperatives.

Source: Annual reports of Farm Credit Banks and Associations (combined) for 1984-93. Estimates for 1994 are from "Summary Report of Condition and Performance of the Farm Credit System Quarter Ended September 30, 1994" Federal Farm Credit Banks Funding Corporation.

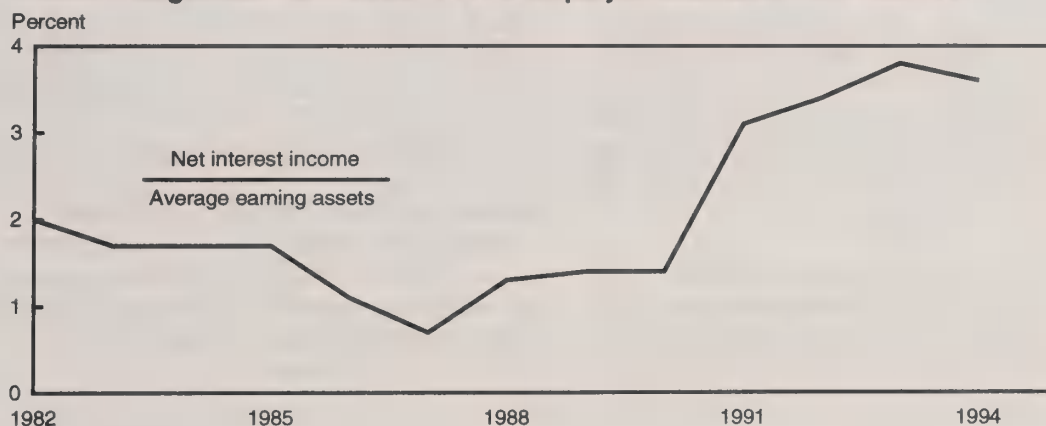
Table 15—Regulatory capital held in excess of regulatory minimum for Farm Credit Banks and combined associations, 1993 1/

	Regulatory capital in excess of:		Regulatory capital + allowances in excess of:	Outstanding Loan Volume	Total Stock- holders
	7% of risk weighted assets	14% of risk weighted assets	14% of risk weighted assets		
	<i>Thousand Dollars</i>				<i>Number</i>
FCS District:					
Springfield	149,681	24,629	72,635	1,742,432	34,454
Baltimore	273,600	33,713	78,018	3,307,615	50,717
Columbia	606,406	256,384	436,865	4,455,900	83,041
Agribank	1,115,810	189,661	424,705	12,886,590	176,667
Omaha	275,176	42,568	195,972	3,790,750	41,856
Wichita	413,446	162,605	311,796	3,455,473	82,432
Texas	536,324	261,433	333,577	3,597,642	42,634
Western	351,626	27,181	159,450	4,628,321	23,052
Spokane	127,049	0	72,121	2,492,357	19,095
All districts	3,849,117	998,174	2,085,139	40,357,080	553,948

1/ Assets are adjusted for risk when determining required capital. See 12CFR 615.5210 for weights.

Source: 1993 Call Reports from the Farm Credit Administration

Figure 12

Interest margins for Farm Credit Banks displayed increases from 1990-94

Consolidated Farm Service Agency Delinquencies Continue To Decline

Direct loan program losses over the past 10 years now top \$17 billion.

After peaking at 16 percent in 1987, CFSA's share of total outstanding agricultural debt declined to 7 percent in 1994--the same share it had in 1978. The decline in outstanding debt is largely due to large loan writeoffs. Outstanding volume on direct loans fell to \$12.6 billion at the end of fiscal 1994. Borrower case numbers declined 7 percent and now are less than half their level of 5 years ago.

The decline in outstanding volume occurred despite a \$200-million increase in fiscal 1994 loan obligations to \$882 million (table 16). The increase reverses a decade long trend of declines in direct program lending. Contributing to the rise was a doubling in Emergency Disaster (EM) program lending to \$146 million. Greater demand resulting from the 1993 Midwestern floods explains much of the rise in EM lending.

Unlike a few years ago, all CFSA credit programs now have specific targeting and accounting requirements. Programs are now targeted specifically to beginning farmers and the socially disadvantaged (SDA). The majority of the unobligated 1994 funds, about \$632 million, was located in the farm ownership (FO) beginning farmer downpayment loan program. Within both the SDA and beginning farmer classifications, distinctions are now made between obligations based on gender and ethnic origin.

Loan Delinquencies Down

At fiscal 1994 yearend, past due principal and interest payments on direct loans totaled \$3.6 billion, down 13 percent from a year earlier (table 17). Although the decline was large, the delinquency rate remains very high at 28 percent. Debt restructuring and loan collections account for much of the decline in delinquent volume. The Economic Emergency (EE) and EM programs account for about two-thirds of outstanding delinquencies. Many of these loans have been delinquent for over 5 years and the EE program has not been funded for a decade.

Under extensive loan servicing rules first established by the Agricultural Credit Act of 1987, CFSA continues to aggressively restructure delinquent debt. CFSA processed writedowns of \$91 million, writeoffs of \$102 million, and debt settlements of \$956 million during the year. Writedowns are subject to recapture agreements with the borrower, writeoffs are not. Debt settlement agreements are made with farmers who cease borrowing from FmHA.

In March 1993, CFSA suspended some foreclosure cases pending a review of its extensive borrower appeal rules. This step was taken to ensure that proper servicing actions were being followed. The suspension was lifted in February 1994 following media reports that nearly a thousand

borrowers had delinquent loans in excess of \$1 million. A loan resolution taskforce was formed in February to handle collecting large loan accounts. In August, the taskforce was given a 2-year assignment of collecting loans of all sizes, not just those over \$1 million.

Loan Writeoffs Remain High

Net loan writeoffs (principal and delinquent accrued interest payments) on direct loans decreased to \$1.3 billion in fiscal 1994, down from \$1.7 billion the previous year. Losses have been declining for 5 years after peaking at \$3.2 billion. Over half of the losses continue to come from the EE and EM programs. With \$4.6 billion in debt remaining in these emergency programs, direct loan writeoffs should remain high in the near future.

Cumulative net loan writeoffs for the last 10 fiscal years have now topped \$17 billion. The mounting losses result from many factors. First, by the nature of its mission as a lender of last resort, a high proportion of CFSA loans will default and will be under-collateralized. Second, during the 1970's and 1980's, farmers used the EE and EM credit programs to replace lost incomes. Credit is generally not considered to be a good substitute for lost income. Also, loan eligibility was loose and the programs were huge in size. In fiscal 1981 alone, EM and EE program obligations hit \$6 billion. Emergency loans account for about 60 percent of the cumulative losses.

A third factor contributing to loan losses is the refinancing of thousands of nonperforming commercial loans, especially during the peak of the farm sector's financial stress. Even with CFSA's terms, many borrowers could not survive. Some loans merely served to transfer the burden of the losses to the government. Then 1987 legislation gave borrowers powerful rights to have CFSA debt forgiven. Although the legislation allowed for a more orderly and consistent handling of delinquent accounts, it likely boosted loss totals. Other 1980's legislation added to the problem by requiring CFSA to lend additional money to borrowers who could not repay existing debts. Finally, CFSA has been criticized for not being as sufficiently diligent in servicing accounts and collecting from delinquent accounts.

Losses tend to mount rapidly when defaulted loans are not quickly resolved. Collection delays add to loss totals because collateral shrinks over time and, unlike other lenders, CFSA must continue to charge interest on defaulted loans. CFSA has been slow to collect on delinquent accounts because the courts blocked CFSA foreclosures for years and the 1987 legislation gave borrowers appeal periods that can last for years.

Table 16—Consolidated Farm Service Agency farmer program obligations, September 30, 1986 to September 30, 1994

Year 2/	Obligations 1/			Share of total	Outstanding principal of farmer programs 3/
	Total	Direct (Insured)	Guaranteed		
	-----Million dollars-----			Pct.	Mil. dol.
1986	4,367.5	2,807.9	1,569.1	35.9	29,240.4
1987	3,080.5	1,515.0	1,587.4	51.5	28,147.6
1988	2,320.7	1,065.8	1,271.4	54.8	28,242.6
1989	2,229.6	1,030.1	1,199.5	53.8	26,525.6
1990	2,193.2	921.3	1,271.9	58.0	23,684.0
1991	2,124.1	633.7	1,490.4	69.2	21,992.1
1992	2,306.4	714.5 4/	1,591.9	69.0	20,460.6
1993	2,135.2	672.7 4/	1,432.5 5/	67.1	18,815.5
1994	2,725.6	881.9 4/	1,843.7 5/	67.6	18,040.1

1/ Obligations are the dollar amounts of funds loaned or guaranteed, including the dollar amount of interest rate assistance provided on guaranteed loans. 2/ Fiscal years. 3/ Total outstanding principal balance of guaranteed CFSA loans and direct or insured CFSA loans at yearend. 4/ Does not include credit sales of acquired property. 5/ Does not include guaranteed agricultural resource conservation demo loans.

Sources: Farmers Home Administration, 616 Report, 4067C Report, and 205 Report, various issues.

Table 17—Consolidated Farm Service Agency direct farmer loan program delinquencies, September 30, 1986 to September 30, 1994

Year 1/	Number of active cases 2/			Principal outstanding		
	Total	Total	Proportion	Total	Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1986	421,651	134,565	31.9	27,575.9	6,276.5	22.8
1987	388,833	127,577	32.8	25,763.7	6,592.0	25.6
1988	376,388	137,958	36.7	25,065.0	8,321.7	33.2
1989	346,442	114,737	33.1	23,281.9	8,005.6	34.4
1990	299,069	80,341	26.9	19,544.2	6,138.8	31.4
1991	280,528	79,204	28.2	17,465.5	5,507.5	31.5
1992	251,892	73,657	29.2	15,536.7	4,804.8	30.9
1993	224,739	56,099	25.0	13,775.5	4,116.2	29.9
1994	208,130	47,723	22.9	12,622.6	3,569.9	28.3

1994 by major program area

Farm ownership	75,071	10,989	14.6	4,819.1	310.9	6.5
Operating loans	60,200	17,716	29.4	2,955.4	665.4	22.5
Emergency-disaster	45,607	12,166	26.7	3,435.1	1,914.8	55.7
Economic emergency	16,496	5,291	32.1	1,244.5	492.5	39.5
Soil and water	7,204	1,282	17.8	131.2	22.7	17.3

1/ September 30 of year shown to account for the annual cyclical trend in delinquencies. 2/ Duplicated cases because some borrowers have loans under several different programs. Prior to 1988 active cases excluded those borrowers who are in foreclosure, bankruptcy, or liquidation status. Active cases do not include loans made to associations. 3/ Prior to 1988 a case was considered delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a case is delinquent if a payment is more than 30 days past due. 4/ Past due principal and interest payments.

Source: Farmers Home Administration, 616 report, various issues.

Consolidated Farm Service Agency Guaranteed Lending Surges

Lending authority declines for fiscal 1995.

Guaranteed farm loan obligations surged \$400 million in fiscal 1994 to a record \$1.8 billion. The large increases reflected greater demand for guaranteed loans and expanded lending authority. All program areas experienced greater demand and for some programs, funding was exhausted during the year. Guarantee obligations are the amount of loan principal that CFSA has agreed to insure for repayment to the lender.

When credit assistance needs grow, CFSA now must serve many farmers through its guarantee programs. Some of the growth in demand appears to have stemmed from the 1993 Midwest floods. Also, CFSA has recently streamlined its guaranteed programs and this might be raising lender participation. Under a loan guarantee, CFSA agrees to guarantee repayment of up to 90 percent of an approved loan made by a qualifying lender if the borrower defaults.

Outstanding CFSA guaranteed volume rose to \$5.4 billion on September 30, 1994 (table 19). Delinquent loan payments represented only 1.5 percent of total volume at fiscal yearend. CFSA losses on guaranteed farm loans fell modestly to \$46 million in fiscal 1994. When compared to the direct loan program, loss rates on guaranteed loans are small at about 1 percent of outstanding guaranteed principal. However, because many of these guaranteed loans are relatively new, the loss rate might climb in future years.

1995 Funding Declines

Funding for most direct and guaranteed programs will be tight in fiscal 1995. Lending authority for all farm credit programs decreased by 10 percent from last year. Perhaps most affected is the direct farm operating program, where total lending authority was cut to \$500 million, or \$150 million less than 1994 obligations (table 18). Actual obligations will be less than \$500 million because of a loan loss accounting requirement. Funding for some programs was cut entirely in fiscal 1995. There is no funding for either the direct or guaranteed soil and water programs or for credit sales of CFSA-acquired property in fiscal 1995.

Through the first 3 months of fiscal 1995, obligations were running about 15 percent ahead of last year's pace. Some of the rise is from applications left over from fiscal 1994, when funding ran out. Again, the 1993 Midwest floods offer some explanation for this pent-up demand. Therefore, for certain programs, not all applicants will have access to CFSA programs, especially in certain regions where demand is high. For some direct lending programs, shortages could appear by spring. Some applicants not served by direct programs may be able to get credit through guaranteed loan programs. CFSA can move unobligated funds from targeted programs to satisfy demand in nontargeted programs near the end of the year.

Outlook Beyond 1995

Much of the outlook for CFSA farm credit programs beyond 1995 might be shaped by the upcoming farm bill and U.S. budget debates. Under a scenario of declining budget allocations, those programs deemed to be of highest priority will garner the greatest share of smaller total funding. Because direct lending programs have had higher delivery costs, both in terms of administration and subsidy costs, guaranteed program funding will likely fair better than direct program funding.

The targeting of loans to socially disadvantaged and beginning farmers and ranchers will likely get greater emphasis under any budget scenario that reduces total program funding. Currently, beginning farmers can obtain special assistance loans for farm operating expenses and the purchase of livestock and equipment. And to assist in the transfer of land to a new generation of farmers, a beginning farmer downpayment program is available. Improvements or additions to these programs will likely be a subject of debate in the upcoming 1995 farm bill. The debate might result in a complete rethinking of all farm credit programs.

The End of FmHA

Nearly 50 years after it was created in the aftermath of the Great Depression, the Farmers Home Administration ceased to operate with the signing of the Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994 (P.L. 103-354) on October 13, 1994. Under the reorganization of USDA agencies, FmHA's farm credit programs were transferred to the new Consolidated Farm Services Agency. The end of FmHA had little effect on its farmer programs but has affected the administration of them. FmHA once had responsibility for administering a range of loan and grant programs for rural businesses, rural communities, rural housing, and agriculture.

Before the USDA reorganization, FmHA had some 1,700 county offices, 250 district offices, and 47 State offices. This delivery structure will change as the USDA reorganization calls for closing and consolidating some 1,300 offices into field service centers. Much of the impact will be regional, concentrated in southern States where co-location of agencies was not widely practiced. Many closure and staffing decisions regarding the delivery of the farm credit programs will be made over the coming year. For example, FmHA's county committees have been disbanded, and no decision has been made on a permanent replacement for them.

Table 18—Consolidated Farm Service Agency major farmer program appropriations and obligations, fiscal 1994, and appropriations, fiscal 1995

Program	Fiscal 1994 appropriations 1/	Fiscal 1994 obligations 2/	Fiscal 1995 appropriations 1/
<i>Thousand dollars</i>			
Farm ownership (FO)			
Direct	78,081	81,980	78,081
Guaranteed	556,543	542,882	540,674
Operating loans (OL)			
Direct	700,000	650,965	500,000
Guaranteed	2,050,000	1,300,067	1,965,000
Emergency disaster (EM)	100,000	145,738	100,000
Credit sales of acquired property	69,838	67,432	0

1/ Budgetary appropriations setting limits on the volume of new loans that can be issued during the fiscal year. Some funding is transferable between programs. 2/ Actual amount of lending authority committed to new loans or loan guarantees.

Source: Farmers Home Administration.

Table 19—Consolidated Farm Service Agency guaranteed farmer loan program delinquencies, September 30, 1986 to September 30, 1994

Year 1/	Number of active cases			Principal outstanding		
	Total 3/	Delinquent		Total	Delinquent 2/	
		Total	Proportion		Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1986	NA	NA	NA	1,664.5	31.4	1.9
1987	18,887	1,052	5.6	2,384.0	42.6	1.8
1988	27,519	1,298	4.4	3,177.6	54.1	1.7
1989	30,016	1,580	5.3	3,243.7	60.6	1.9
1990	36,955	1,681	4.6	4,139.8	58.5	1.4
1991	40,169	1,904	4.7	4,526.6	59.3	1.3
1992	42,189	2,376	5.6	4,923.9	102.8	2.1
1993	42,475	2,077	4.9	5,044.8	98.5	2.0
1994	44,129	1,659	3.8	5,417.5	82.3	1.5
1994 by major program area						
Farm ownership	16,237	486	3.0	2,331.3	25.1	1.1
Operating loans	27,647	1,130	4.1	3,060.9	53.6	1.8
Economic emergency 4/	237	41	17.3	24.8	3.5	13.9

1/ September 30 of year shown. 2/ Amount delinquent includes past payments of principal and accrued interest. 3/ Duplicated cases because some borrowers have loans under several different programs. 4/ The economic emergency program is no longer being funded. NA = Not Available.

Source: Farmers Home Administration, 4067 Report, various issues.

Life Insurance Company Farm Loan Portfolios Improve

Loan delinquencies and foreclosures are at their lowest since the early 1990's. Loan volume forecast to grow slightly in 1995.

Historically, agricultural real estate mortgages have been an important investment for life insurance companies and a key source of farm real estate loan funds. Approximately 16,000 agricultural mortgage loans were held by 19 life insurance companies on June 30, 1994. During 1994, the quality of agricultural mortgage portfolios of life insurance companies generally improved.

Delinquencies Have Declined Significantly in Recent Years

Delinquency rates based on the number of loans held by life insurance companies were lower for agricultural mortgages than for nonagricultural loans throughout the 1970's. The agricultural delinquency rate surpassed the nonagricultural rate in June 1981 and did so continuously until December 1991. The June 1987 agricultural mortgage delinquency value of 9.12 percent was the highest recorded since the American Council of Life Insurance initiated its survey in 1954. Agricultural loan delinquency declined to a low of 1.99 percent in December 1993, but stood at 2.51 percent in June 1994 (table 20). The agricultural delinquency rate now is below that for nonagricultural loans and is the lowest since 1982.

Delinquency rates on the volume of loans outstanding have been lower for agricultural mortgages than nonagricultural loans since 1991 because of problems with the industry's urban commercial real estate portfolio. The percent of agricultural mortgage debt that is delinquent exceeded the nonagricultural rate from June 1978 until December 1991. The agricultural delinquent share rose to a record 19.85 percent in June 1986 but declined to 3.77 percent by June 1994 when 5.0 percent of the nonagricultural portfolio was delinquent (table 20). It now is the lowest since 1980. Some \$327.6 million of life insurance company agricultural mortgage debt was delinquent on June 30, 1994.

Foreclosures Down from Earlier Highs

Agricultural mortgage foreclosure rates by number of loans have exceeded nonagricultural rates since June 1979, and stood at 0.97 percent in June 1994, the lowest foreclosure level since 1983 and down from the record 3.91 percent 7 years earlier (table 21). A total of 158 life insurance company agricultural mortgage loans were in the process of foreclosure on June 30, 1994, down from 1,915 on June 30, 1986.

Agricultural mortgage foreclosure rates by dollar amount of loans outstanding exceeded nonagricultural rates from June 1987 until December 1991. Agricultural foreclosure rates reached record highs in the 1980's (table 21). On June 30,

1986, a record 8.23 percent of the amount outstanding was in the process of foreclosure, but by June 30, 1994, it had declined to 1.04 percent, the lowest since 1980. A total of \$90.1 million in life insurance company farm mortgage loans was in the process of foreclosure on June 30, 1994, down from \$408.7 million 5 years earlier.

The number and dollar amount of agricultural and nonagricultural loans actually foreclosed during 1980-94 are shown in table 22. Agricultural mortgage foreclosures rose each year of the 1980's until 1986 when they peaked at \$827.5 million. During 1982-85, the dollar amount of agricultural mortgage foreclosures even exceeded that for nonagricultural mortgages. Foreclosures on life insurance company agricultural loans during 1980-90 totaled \$3.58 billion, with 57.2 percent occurring during 1985-87.

Outlook Is Generally Favorable

There will be opportunities in 1995 for life insurance companies to make profitable farm mortgage loans, but the competition for the better-quality loans will continue to be keen. Insurance companies will continue to have different views on agricultural lending. Active companies continue to have an ample supply of loanable funds and are aggressively competing on rate, terms, and loan-to-value ratio. Except in areas with weather problems, continued financial progress is expected. The seven companies active in the farm loan market all report that available funds exceed qualified agricultural applications.

Total life insurance company farm loans outstanding are projected to increase slightly in 1995, the third consecutive year of growth. Activity on Farmer Mac loans that can be sold out of the company's portfolio may affect total loan holdings. All four Farmer Mac pools formed to date have involved a life insurance company as either an originator, a pooler, or both. The cumulative value of mortgages guaranteed under Farmer Mac I is \$720 million on pools formed beginning in 1991. This loan amount has moved out of the life insurance farm loan category and thus lowered reported farm loan holdings.

The life insurance firms currently active in the farm mortgage loan market are big companies with large farm loan portfolios. Most of the industry's new lending will consist of relatively large loans in selected States rather than being distributed evenly nationwide. At yearend 1993, 55.0 percent of the outstanding life insurance company farm mortgages were in California, Florida, Iowa, Texas, and Washington.

Table 20—Life insurance company mortgage loan delinquencies, 1987-94 1/

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
	<i>Percent</i>			
1987 June	1.46	9.12	2.96	18.01
Dec.	1.60	6.83	2.61	14.31
1988 June	1.53	6.75	2.77	13.27
Dec.	1.74	4.44	2.44	8.87
1989 June	1.55	4.68	2.75	8.65
Dec.	1.68	2.68	2.37	4.74
1990 June	1.87	3.41	2.94	5.26
Dec.	2.10	2.40	3.60	4.22
1991 June	2.30	3.55	5.25	6.35
Dec.	2.66	2.34	5.79	3.84
1992 June	2.87	4.07	7.35	5.48
Dec.	3.05	2.64	6.50	3.33
1993 June	2.78	3.47	6.23	4.06
Dec.	2.84	1.99	4.48	2.21
1994 June	2.94	2.51	5.00	3.77

1/ Delinquent loans (including loans in the process of foreclosure). A delinquent loan is a nonfarm mortgage with interest payments in arrears at least 2 months (60 days if other than a monthly pay) or a farm loan with interest in arrears more than 90 days.

Table 21—Life insurance company mortgage loans in the process of foreclosure, 1987-94 1/

End of month	Rates by number of loans		Rates by amount	
	Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
	<i>Percent</i>			
1987 June	.37	3.91	1.11	7.98
Dec.	.41	3.02	1.07	6.43
1988 June	.46	3.36	1.16	6.33
Dec.	.45	2.60	1.22	4.83
1989 June	.43	2.35	1.38	4.67
Dec.	.43	1.30	1.29	2.28
1990 June	.46	1.31	1.56	2.23
Dec.	.51	1.13	1.71	1.91
1991 June	.58	1.26	2.39	2.45
Dec.	.68	1.29	2.78	2.24
1992 June	.77	1.74	3.40	3.11
Dec.	.76	1.57	3.08	2.32
1993 June	.84	1.52	2.89	1.93
Dec.	.80	1.04	2.14	1.30
1994 June	.82	.97	2.46	1.04

1/ Reporting companies account for approximately 85 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey. Loans in foreclosure include those on which foreclosure action has been authorized, including any involved in a subsequent filing of bankruptcy. Beginning in 1988, the loans in foreclosure category includes loans in redemption period.

Table 22—Life insurance company mortgage loans foreclosed, 1980-94 1/

Year	Nonagricultural mortgages		Agricultural mortgages	
	Number	Thou. dollars	Number	Thou. dollars
1980	549	63,237	26	18,160
1981	552	58,491	47	55,741
1982	760	131,392	167	170,310
1983	868	114,993	306	347,002
1984	1,024	242,428	475	289,251
1985	1,033	328,558	1,000	530,235
1986	1,541	1,143,082	1,654	827,472
1987	2,048	1,580,027	1,515	691,914
1988	1,196	2,530,105	727	364,414
1989	1,098	2,178,949	356	204,361
1990	1,018	3,042,171	122	85,281
1991	1,284	4,942,349	125	94,875
1992	1,365	6,665,288	88	148,006
1993	1,159	6,013,084	79	96,318
1994 2/	436	2,168,827	12	18,324

1/ Loans foreclosed include those for which title to the property or entitling certificate was acquired during the period shown, either through foreclosure or voluntary conveyance in lieu of foreclosure. Dollar amounts include principal outstanding at the time of the foreclosure, amounts capitalized for interest, foreclosure costs and any advances made to protect the collateral. 2/ January 1 through June 30.

Source: American Council of Life Insurance, Investment Bulletin, various issues.

Is Farmer Mac at a Crossroad?

Steps were taken in 1994 to rekindle the secondary mortgage market.

Facing a drop in capital and revenues, the Federal Agricultural Mortgage Corporation (Farmer Mac) took steps in 1994 to rekindle its secondary market for agricultural and rural housing mortgages. With the exception of a small loan pool in 1994, loan securitization has been dormant since 1992.

In 1993 Farmer Mac expected that two poolers, Travelers Realty Investment Company and Prudential Securities Secured Financing Corporation, would aggressively submit new pools for securitization. Both poolers in that year began "open window" pooling programs, where whole loans were purchased from Farmer Mac originators and priced based on Farmer Mac's Linked Portfolio Strategy (LPS). Under LPS, Farmer Mac purchases senior securities or obligations backed by qualified loan pools from the pooler and finances these purchases by selling its own securities.

Nearly 2 years after these open window programs were announced, little securitization has resulted. In August 1994, Prudential securitized a \$38-million pool and was considering adding more to the pool depending on the outcome of the sale of the subordinated securities to capital market investors. Travelers has failed to submit a pool for guarantee. Both poolers remain active in purchasing loans, often through networks of mini-poolers, but are not active in selling them through Farmer Mac.

Strategic Alliances Among 1994 Initiatives

To spur poolers to securitize loans, Farmer Mac undertook several initiatives in 1994. Farmer Mac now requires poolers to submit loan pools for guarantee or face the risk of losing certification. An annual \$50-million volume threshold has been established. As of early 1995, Farmer Mac had not decertified any poolers.

Farmer Mac also began looking for poolers to enter strategic alliances to ensure purchased loans are sold through its market. Farmer Mac and the Western Farm Credit Bank (FCB) of Sacramento entered into such an agreement in November 1994. Under their 5-year agreement, the Western FCB will establish and operate a nationwide pooling program for agricultural mortgages open to all Farmer Mac stockholders. Farmer Mac has agreed to provide financial and technical support and to enter not more than one other such agreement in the first 4 years.

Under the alliance, the Western FCB will periodically submit loan pools to be guaranteed by Farmer Mac. Initially, the Western FCB has agreed to submit a pool of at least \$50 million. It has also agreed to purchase Farmer Mac Class C Non-Voting Common Stock in amounts equal to the expense of establishing and operating the pooling program. To offset the stock's purchase price, Farmer Mac will purchase limited recourse debt issued by the Western FCB.

Farmer Mac is also looking for a strategic alliance for its rural housing component. Early in 1994 the Farm Credit Bank of Columbia halted plans to begin a Farmer Mac pooling program for rural housing mortgages when the Federal National Mortgage Corporation (Fannie Mae) announced plans to enter into rural housing markets. At the beginning of 1995 the three parties were still trying to negotiate a business arrangement. Fannie Mae is looking for a nationwide collecting agent or pooler, but the Columbia FCB can only wholesale loans (purchase loans for resale) from outside its district boundaries through Farmer Mac.

Capital Declines Further in 1994

Farmer Mac failed again to generate a profit in 1994. For the first 9 months of 1994, Farmer Mac reported a loss of \$1.1 million. Start-up costs and cumulative operating losses have whittled the initial stockholder equity from \$21.6 million to under \$12.5 million as of September 30, 1994. Farmer Mac capital still exceeds required minimum regulatory capital.

Without new pools for Farmer Mac to guarantee, the outstanding principal balance on guaranteed loan pools will continue to shrink, and with it Farmer Mac's revenue. Farmer Mac collects fees that range from 0.25 to 0.375 percent per year on the outstanding principal balance of its guaranteed securities. Farmer Mac's other primary source of income is net interest income. Farmer Mac II--the secondary market for USDA guaranteed loans--is providing revenue growth, but the volume is still relatively small.

Outlook for 1995 and Beyond

Farmer Mac has undertaken a series of marketing and development initiatives since it opened to expand its market and make it profitable. Farmer Mac faced some structural problems in the way its secondary market was set up in enabling legislation, as well as farm mortgage market conditions that were not advantageous to its development. Over 7 years after it was created by Congress, the market might be at a crossroad.

During Farmer Mac's formation, investment bankers showed an interest in developing the market, but quickly shied away. Farmer Mac's early development initiatives were concentrated on developing a list of certified poolers. In all, nine poolers were certified. When poolers failed to produce pools in 1990 and 1991, Farmer Mac obtained authorization from Congress to purchase and sell securities through the LPS program. The new Farmer Mac structure still did not allow Farmer Mac to pool loans itself, but the structure did give Farmer Mac a method to provide lower cost financing for poolers. Farmer Mac also obtained authority to operate a secondary market for USDA guaranteed loans--called Farmer Mac II.

The LPS authority yielded some success with the life insurance company poolers, but activity faded after 1992. Life insurance companies, which comprise five of the nine poolers, participated in all five pools to date and had been a central focus of Farmer Mac's efforts to develop the market. These five loan pools have totaled about \$720 million and were formed predominantly with existing loans from four life insurance companies.

Loans are still being purchased by two life insurance companies, but they mostly remain in the portfolios of the companies. During the last few years Farmer Mac also placed considerable effort in promoting the farm mortgage market's advantages to commercial bankers. While progress has been made in stimulating loan sales by bankers, Farmer Mac does not benefit directly unless the sales are securitized.

Now Farmer Mac's immediate efforts appear concentrated on the FCS. Through much of Farmer Mac's development, the FCS largely viewed Farmer Mac as a competitor and hence ignored it. But this attitude appears to have changed as the FCS has undergone consolidation and has watched its market share of farm debt drop. The activities of the Western and Columbia FCBs suggest that the FCS may not be as antagonistic towards Farmer Mac as it once might have been.

If the FCS fails to ignite the market, Farmer Mac may have to ask for another legislative fix. The most advantageous requests would be to reduce or eliminate the 10-percent subordinated interest requirement and allow Farmer Mac to purchase and pool loans itself. Regardless of legislation, Farmer Mac may be forced to consider discontinuing operations if significant securitization volume does not materialize in the next few years.

Besides structural factors, Farmer Mac also faces a relatively quiet farm real estate market and sufficient lending capacity among agricultural lenders. Benefiting Farmer Mac's development is a recent tightening of lending capacity among agricultural banks, particularly in some regions. Rising interest rates and lower farm incomes could trim farm mortgage activity in the coming year. While further increases in short term interest rates relative to longer term rates could spur farmer demand for longer term fixed rates--a benefit to Farmer Mac.

Farmer Mac II Volume Up

In contrast to the Farmer Mac market, Farmer Mac II continues to grow. The volume of USDA guaranteed loans sold through the Farmer Mac II market in 1994 totaled \$47.6 million, up from \$39.5 million in 1993. Cumulative loan sales since the market's inception totaled \$120.9 million and

outstanding principal stood at \$101 million at 1994 yearend. A total of 379 loans were sold or swapped last year, bringing the cumulative total to 959.

Under Farmer Mac II, lenders can swap guaranteed loans for a marketable security or sell them to Farmer Mac for cash. Most loans are now sold for cash under Farmer Mac's LPS program. LPS loan rates are tied to a Farmer Mac cost of funds index (COFI), which Farmer Mac creates by selling discount notes and bonds. The guaranteed portion of farm operating loans, farm ownership loans, business and industry, and community development loans are eligible for sale.

Lender participation in Farmer Mac II grew in 1994, with 151 different lenders having sold at least one guaranteed loan so far. This count is up from 111 at the beginning of 1994. Commercial banks are the primary users of Farmer Mac II. Regional lender use of the market is evident with four States--California South Dakota, Vermont, and New York--accounting for nearly half of cumulative sales. Loans from 30 States, the same count as last year, have been sold through the market.

Steady Growth Expected

Farmer Mac II volume is still small relative to total USDA's guaranteed loan volume, which suggests that the market has ample room for growth. Farmer Mac II volume in 1994 constituted less than 5 percent of CFSA fiscal 1994 guaranteed loan volume that is eligible for Farmer Mac II sale. Factors affecting 1995 growth include the pace of guaranteed lending and the economic opportunities the market may offer lenders.

The pace of guaranteed lending is influenced by lender acceptance, the economic well-being of farmers, and the annual authorities of the guarantee programs. Funding for the major farm programs has been cut slightly for fiscal 1995. And despite some regional decline in farm financial conditions, a major decline in the creditworthiness of farmers is not anticipated this year. Therefore, market volume should continue to grow steadily, but not dramatically in 1995.

Besides farm programs, Farmer Mac expects further growth in sales of guaranteed Business and Industry (B&I) program loans. The program is now administered by the Rural Business and Cooperative Development Service. So far a half-dozen of these loans totaling about \$7 million have been sold. Funding for the B&I program was doubled in fiscal 1995 and lender knowledge of the program is rising. No loans guaranteed under the Community Facility loan program have yet been sold though Farmer Mac.

Agricultural Income, Asset Values, and Risk Will All Be Affected

Chances for major changes are enhanced by Congressional turnover and budget pressure. Lender groups have their own wish lists.

The decisions embodied in any farm legislation this year will affect financial institutions and their customers in a variety of ways. These range from the conduct of direct government lending programs targeted at farmers and rural areas to the effects of government policy on incomes, collateral values, and risks associated with agricultural or rural economic activity. Of course, "farm bill" is a misnomer. The last "farm bill" was officially titled the Food, Agriculture, Conservation, and Trade Act of 1990, or FACT. As the title indicates, this legislation affects much more than farm subsidies. Other policy areas touched on in the typical farm bill include resource conservation, trade policy, domestic and foreign food assistance, rural development, agricultural research, disaster assistance, and agricultural credit policy.

This will be the first farm bill in 40 years written under a Republican-controlled Congress. Members of the House agriculture committee are relatively inexperienced in writing farm bills. Only 10 of the committee's 49 members were involved in writing the 1990 farm bill, and only 4 of the veteran members are Republicans. In contrast, 14 of the 17 members of the Senate agriculture committee are 1990 farm bill veterans. In the full House, the percentage of members from rural and farm districts is smaller than just a few years ago. And both political parties have promised to reduce government spending, employment, and regulation.

Although farm bills have been used to reauthorize existing programs or introduce new policies for an extended period (generally 5 years), the changing political climate indicates that this may not always be the case. Proposals to remove the large food and nutrition programs from the farm bill reauthorization would have lasting repercussions on the coalition building necessary to pass each 5-year plan.

The Farm Bill as a Vehicle for Financial Legislation

In the grand scheme of things, farm bills have not been a major vehicle for explicit financial legislation. In the past, some in Congress have opposed including financial legislation in the farm bill. Despite these objections, explicit credit issues have been addressed in both a credit title and a rural development title in the last two farm bills. Table 23 indicates that of the 25 titles in the 1990 Food, Agriculture, Conservation and Trade Act, the last farm bill, only the two titles mentioned dealt explicitly with financial issues. Most of the other titles, however, have implicit, and sometimes major, financial impacts.

Explicit financial issues are those involving financial institutions, their regulators, or Federal programs including Farmers Home Administration (now part of the Consolidated Farm Service Agency), the Rural Development

Administration (now part of the Rural Utilities Service), the Farm Credit System, commercial banks, the Federal Agricultural Mortgage Corporation (Farmer Mac), futures markets, and capital markets. Provisions addressing explicit financial issues to the extent they appear in the farm bill are incorporated in a credit or rural development title.

Implicit financial issues can be imbedded in any title of the farm bill. Such issues include provisions affecting cash flows, income risks, and asset values. To varying degrees, each of these is affected by provisions that affect potential land uses or change subsidies, crop insurance, other disaster relief, trade policies, environmental policies, and "takings" policies. Of course, such provisions are ubiquitous in the farm bill, and their impact on farm finances is recognized by all concerned.

Financial issues explicitly addressed in the last farm bill included changes in the operations of the former Farmers Home Administration, allowing Farm Credit System lenders to extend credit to farmers who process or market agricultural products, and authorization for Farmer Mac to sell securities backed by pools of FmHA/CFSA-guaranteed loans. Changes in CFSA procedures included more emphasis on guaranteed lending, imposition of a \$300,000 per borrower lifetime cap on writedowns and writeoffs, and reducing to 1 year the period during which CFSA-acquired property could be sold only to CFSA-eligible borrowers.

These issues, while not unimportant to the people they directly affect, have a limited impact relative to the roughly \$150 billion agricultural loan market. In contrast, table 24 shows other financial legislation passed since 1985. This legislation includes such far-reaching provisions as the phasing in of interstate banking, the reregulation and reform of commercial banks and thrifts, rescue and reform of the Farm Credit System and its regulator, and special bankruptcy treatment for family farmers.

Farm Bill Possibilities

It is too early in the farm bill process to have a clear idea about the outcome. However, public statements by members of Congress, interest groups, and the administration indicate some possibilities. Several factors increase the likelihood that fundamental changes in farm policy will occur this year. The political environment in Washington plays an important role.

Any substantial changes in regulation, program expenditures, or explicit financial provisions of farm legislation could have significant and varying impacts on farm lenders depending on the location and commodity mix associated with their loan portfolios. Suggestions for controlling farm spending

include removing entitlement status from farm commodity programs, reforming quota-based commodity programs (tobacco, dairy, peanuts, and sugar, as well as fruits and vegetables grown under marketing orders), replacing traditional price support programs with some form of revenue insurance, moving away from commodity-specific acreage bases, targeting farm program payments to farmers with limited income, tightening the cap on total farm program payments per individual, downsizing the conservation reserve program, and curtailing domestic and foreign food assistance.

Of course, not all changes under discussion will have uniform, substantial, or necessarily negative impacts on farm income, asset values, or risks. In addition, some of the benefits farmers may lose through proposed changes in commodity programs may be offset by changes in the tax code or other legislation. Such legislation could include property rights protection, wetlands protection, endangered species protection, and pesticide restrictions. Tax changes under discussion include allowing full deductibility of health insurance premiums for the self-employed, reducing capital gains taxes, allowing tax-deferred savings to be used to offset income lost because of natural disasters, and reducing estate taxes.

Farm lenders also have changes they would like to see included in the farm bill. The FCS will be seeking new powers to serve nonfarm businesses, rural homeowners in communities up to 20,000, and to support rural infrastructure and community development. Such changes would represent a major expansion of the FCS's mission and Federal charter. Several changes will be considered related to the Farm Credit System Insurance Corporation (FCSIC), including whether to separate its board from that of the Farm Credit Administration. The two entities currently report to boards with the same membership but different chairpersons, but separate boards are to be established in 1996. The FCS opposes establishing a separate full-time board for the FCSIC. Other FCSIC issues that may be addressed are related to a forthcoming GAO report that was mandated in the Farm Credit System Safety and Soundness Act of 1992. That Act required GAO to consider four issues: risk-based premiums, FCSIC access to association capital, supplemental premiums, and further consolidation of FCS districts.

Commercial bankers have indicated a heightened interest in developing further access to funds through government-sponsored enterprises such as the Farm Credit System, Farmer Mac, and the Federal Home Loan Banks, but oppose any expansion of FCS retail lending authority. Other initiatives championed by commercial bankers would authorize Farmer Mac to make a secondary market in

economic development loans and allow banks to establish corporations to market equity or quasi-equity interests to capitalize business start-ups or expansions.

Farmer Mac, the secondary market for agricultural and rural housing mortgages and certain USDA guaranteed loans, continues to struggle as an ongoing entity and may seek legislation soon to improve its charter. Past farm bill legislation has been used as a vehicle to change Farmer Mac's charter. In particular, Farmer Mac might request changes in two areas not found in the structures of the other successful government-sponsored secondary markets.

First, it may seek to reduce or eliminate the 10-percent subordinated participation requirement. Congress imposed this requirement to reduce the chances that lenders would sell bad loans into Farmer Mac guaranteed pools causing excessive losses. Such sales have not proved to be a problem for other secondary markets. Nonetheless, the requirement greatly reduces the incentive to participate in Farmer Mac because regulators have ruled that as much capital must be held for the subordinated participation as for the entire loan. The second possible change would give Farmer Mac the ability to directly purchase and pool loans. Farmer Mac must now rely on third parties that it certifies as poolers to purchase loans and form pools. Often these poolers find it advantageous to hold pools rather than sell them through Farmer Mac. Doing so, of course, eliminates a source of revenue for Farmer Mac.

The decline in the number of new entrants into farming over the past decade has drawn considerable Congressional attention. The 1995 farm bill debate will likely examine credit subsidies as a way to assist beginning farmers. Changes to CFSA programs and the FCS's charter are two possibilities that Congress might consider for improving beginning farmer access to credit. FCS's broad charter does not specifically require it to target its lending resources to this class of borrowers, but 1980 legislation does require it to operate programs to assist young, beginning, and small farmers.

CFSA's mission is more specific and legislation in 1992 created special USDA credit programs to assist beginning farmers. Improvements or additions to these programs and further targeting of lending resources to beginning farmers appear likely in any farm credit title. If total CFSA lending authority continues to shrink, the targeting of lending resources will garner even greater attention. The budgetary costs of credit programs could force a rethinking of the objectives and operation of all CFSA farm credit programs. This is especially true of direct lending programs where credit subsidy costs are greatest.

Table 23—Explicit financial provisions and implicit financial impacts in the Food, Agriculture, Conservation and Trade Act of 1990

Title		Explicit financial provisions	Implicit financial impacts
I	Dairy		X
II	Wool and Mohair		X
III	Wheat		X
IV	Feed Grains		X
V	Cotton		X
VI	Rice		X
VII	Oilseeds		X
VIII	Peanuts		X
IX	Sugar		X
X	Honey		X
XI	General Commodity Provisions		X
XII	State and Private Forestry		X
XIII	Fruits, Vegetables and Marketing		X
XIV	Conservation		X
XV	Agricultural Trade		X
XVI	Research		?
XVII	Food Stamp and Related Provisions		X
XVIII	Credit	X	
XIX	Agricultural Promotion		X
XX	Grain Quality		X
XXI	Organic Certification		X
XXII	Crop Insurance and Disaster Assistance		X
XXIII	Rural Development	X	
XXIV	Global Climate Change		1/
XXV	Other Related Provisions		X

1/ Study authorized with financial impact of study inconsequential.

Table 24—Other legislation significantly affecting agricultural and rural finance since 1985

1985	Farm Credit Amendments
1986	Farmer Bankruptcy Act (Chapter 12) Farm Credit Amendments
1987	Farm Credit Act of 1987
1989	Financial Institution Reform, Regulation, and Enforcement Act (FIRREA)
1990	Omnibus Budget Reconciliation Act
1991	FDIC Improvement Act (FDICIA)
1992	FCS Safety and Soundness Act Beginning Farmer legislation
1993	Chapter 12 provisions extended Omnibus Budget Reconciliation Act
1994	Community Development Financial Institutions Act Interstate Banking and Efficiency Act North American Free Trade Agreement Crop Insurance Reform The Department of Agriculture Reorganization Act General Agreement on Tariffs and Trade

Credit as a Factor Influencing Farmland Values: What Does the Evidence Show?

by Jerome M. Stam¹

The latest farmland boom-bust cycle of the 1970's and 1980's caused agricultural economists to search for an adequate explanation. Some viewed the farm sector's excessive use of mortgage credit as a major contributor to the boom in farmland prices above what the sector's earnings picture would support. A look at the literature on factors determining farmland values, speculative farmland price bubbles, and the role of farm mortgage credit yields a remarkable lack of consensus. Mortgage credit is only one of numerous variables affecting farmland values. Moreover, it is difficult to isolate credit as a single variable, and results are split regarding its contribution to farmland price booms.

Introduction

This article examines and places into perspective the agricultural economics literature regarding the influence of credit use on the farmland market. The article briefly summarizes the numerous research efforts to explain farmland values and then examines the literature on credit's role in inducing the 1970's farmland price boom.

Agriculture has evolved into one of the more capital-intensive sectors of the U.S. economy and is significantly dependent on credit financing. Farm real estate--valued at \$656 billion in 1993--comprises about three-fourths of all wealth held by the U.S. farm sector.

Farm real estate is not only a productive asset but is also an important source of loan collateral. The latest ERS data on farmland transfers in 1989 showed that 4.6 percent of parcels and 3.5 percent of rural land acreage transferred hands that year. USDA data for 1993 show that debt was incurred on 60 percent of farmland transfers. Debt was 72 percent of the purchase price on debt-financed transfers and institutional lenders extended some 70 percent of the credit used in purchasing farmland that year. Total farm business real estate debt was \$77.2 billion at yearend 1994.

For decades, agricultural economists were conditioned to expect a close relationship between farm income and land values. During the 1950's increases in per acre farmland values began to accelerate even during years when farm income was steady to lower, thus putting to the test long-held theories. Researchers at first were puzzled by this paradox, but they eventually came to recognize that their earlier perspective had been too narrow. Their tendency to limit their analyses to those economic forces operating within the farm sector had hampered a fuller understanding of past and current trends. Subsequent efforts proceeded to explain farmland price changes on the basis of broader economic trends and uses of land originating outside the farm sector. It was recognized that earlier assumptions were

oversimplified and that value judgments affecting the farmland market were handled inadequately.

Per acre farmland values kept trending upward during the 1960's. But buoyed by a number of factors, such as an export boom, they skyrocketed during the 1970's and early 1980's. From 1970 to the 1982 peak, U.S. farmland value per acre jumped 319.9 percent, compared with a rise in the implicit price deflator of 138.1 percent (figure A-1). This boom was followed by a 27.2-percent decline during 1982-87 before a slow upward trend resumed.

This strong boom-bust cycle intensified the search for an adequate explanation among researchers. One perspective is that the excessive use of mortgage credit by the farm sector was a major contributor to the boom in farmland prices above what the farm sector's earnings picture would support. The data show that while U.S. per acre farmland values increased 319.9 percent from 1970 to a peak in 1982, total farm business real estate loans rose 270.1 percent. In 1982, farm mortgage loans of the Farm Credit System (FCS) were up 580.1 percent and the subsidized real estate loans of the Farmers Home Administration (FmHA--made a part of the Consolidated Farm Service Agency in 1994) were up 280.6 percent from 1970. The increases are viewed as evidence by some that farm mortgage credit had been too easy to obtain. The opposing perspective, however, is that lenders and farmers made rational decisions on the use of credit after 1970 based on the prevailing market forces. The latter group's view is that problems arose when market fundamentals changed radically in the late 1970's and early 1980's.

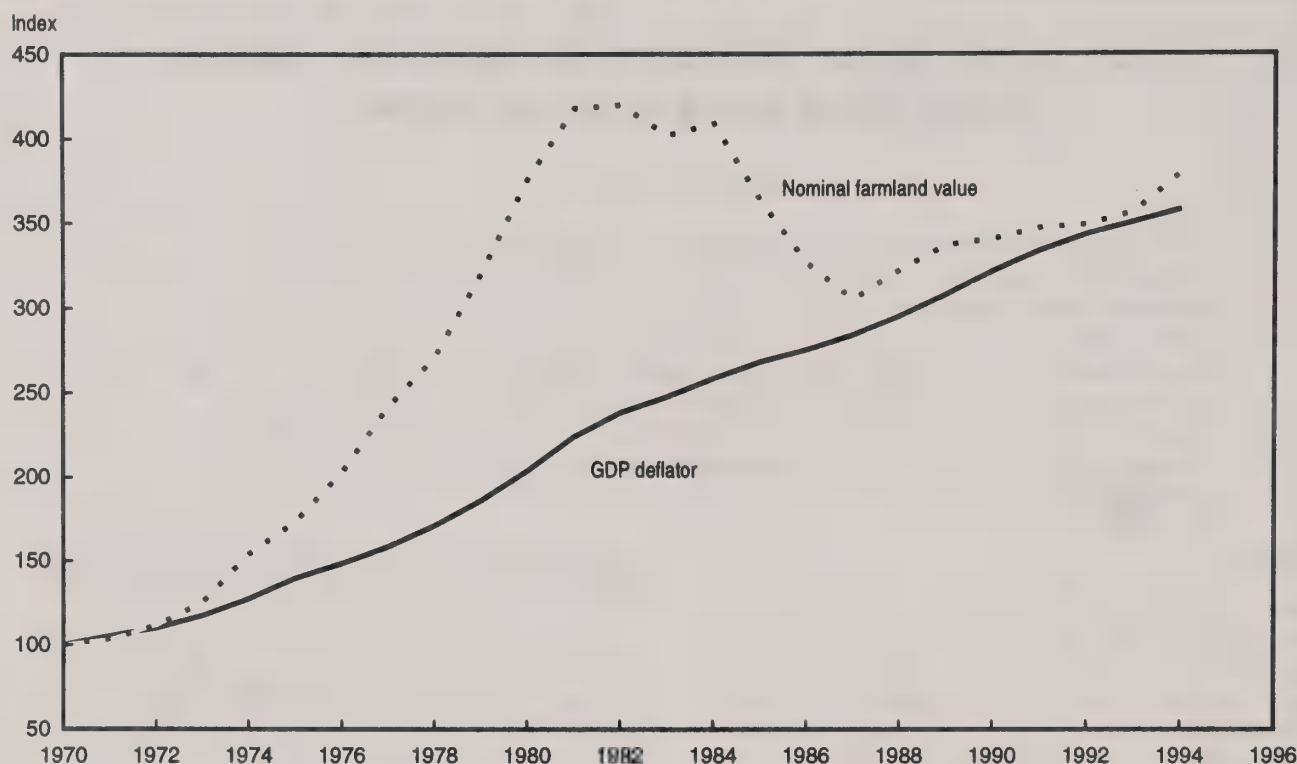
Explaining Farmland Price Volatility

There is a long and rich history leading to the modern development of empirical models designed to explain farmland values. Various theoretical analyses and numerous empirical econometric models have been employed to explain farmland values. The research methods differ and

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Figure A-1

Index of average nominal value per acre of U.S. farm real estate (48 States) compared with the index of the Gross Domestic Product (GDP) implicit price deflator, 1970-94 (1970=100)



the influencing variables, such as credit and debt, thus are considered in various ways. Much research has been conducted on the determinants of farmland prices with sometimes conflicting results.

By the late 1950's, agricultural economists were made most aware of the increasing importance of farm capital gains as farmland values continued to rise. A considerable body of literature arose to explain the discrepancy between agricultural productivity and market values of rural land. Economists debated the nature of this "supplement" to "normal" farm income and had differing opinions regarding the desirability of lumping capital gains and losses with ordinary income. Some felt capital gains were paper profits based on values obtained through the operation of a thin land market. A number of estimates of farm capital gains and losses were made, but they differed in scope, method, and concept.

The literature developed since that time includes an impressive list of factors that help determine farmland prices. These include inflation, farm income, government payments, capital gains, net rent, alternative investment opportunities, transfer rates of farmland, farm enlargement, rate of return on common stock, credit availability and terms, farm debt levels, commodity prices, input prices, yields, taxes, foreign buyers, and technological advances. It is easy to see why it is difficult to sort out the impacts of financial variables, such as credit, debt, interest rates, and related variables, in determining farmland prices. In a review of the research on farmland value determination, Robison and Koenig (1992) concluded the most remarkable feature about these studies is their lack of consensus (p. 212).

Still another recent theory of farmland values about which researchers disagree is speculative or rational bubbles. A speculative bubble is essentially an overreaction to current price information. During a speculative bubble, farmland owners and prospective buyers incorrectly infer from past experiences the future earnings stream from farmland and, consequently, farmland's future value. Speculative bubbles may cause farmland to be priced differently than its agricultural use value simply because the future is difficult to predict. This is important because some economists allege that farm mortgage lenders helped provide the credit that fueled a farmland price speculative bubble in the 1970's.

Price overreactions and price bubbles are not mutually exclusive concepts. The concept of a bubble, however, usually means a divergence between the actual market price and market fundamentals over a longer period. Price bubbles arise from three necessary conditions: durability, scarcity, and common beliefs. Farmland is durable and the market for farmland can become subject to common belief. But some analysts question the assumption that it is scarce in the sense that the supply is perfectly inelastic or that it is fixed (Tegene and Kuchler, 1990, pp. 4-5).

Several studies have been conducted in an attempt to see if the 1970's farmland price boom resulted from a bubble. Despite this work, the empirical questions regarding the existence of speculative bubbles remain to be resolved. The research on farmland investment decisions based on market fundamentals and the possibility of speculative bubbles demonstrates little consensus. Kuchler and Tegene (1990) wrote that "it is impossible to prove conclusively that bubbles do or do not exist. Until economists can say exactly how fixed agricultural land is in agricultural production, no

one will be certain how much income should be attributed to land" (p. 37).

Role of Credit In Inducing the 1970's Farmland Price Boom

Questions have been raised about the role of credit and whether easy credit from farm mortgage lenders, particularly the life insurance companies, FCS, and FmHA, helped spur the 1970's farmland price boom. The factors influencing the supply and demand of agricultural mortgage credit, farmland markets, and their interrelationship are complex. Hesser and Schuh (1963) hypothesized that the supply of credit offered to agriculture is a function of lenders' expectations concerning the ability of farmers to repay, but admitted it is not known how lenders formulate expectations (p. 840). They further hypothesized that lenders considered "real" prices of farm products and the value of agriculture's assets in deciding how much credit to extend.

Credit is only one of numerous variables possibly influencing farmland prices. The view of credit's significance by those persons conducting the various studies can be influenced by how it is regarded philosophically. Such views range from credit being a passive factor or a benign facilitator of economic change to it being an input carrying much associated risk and an active or causal influence on land values. The optimistic view is illustrated by this Congressional testimony delivered by Irwin in 1983:

I view credit as a facilitator of those changes that are being pressed on us by more basic economic, social, and political forces that directly affect the farm businesses of borrowers. In general, credit is not the cause of such changes, but the medium by which they are accomplished. Nor is it the job of a credit institution to impose its judgment on that of a borrower as he or she adapts to these forces, except when safety of the loan is involved. Thus, participation in general farm programs is ordinarily at the borrower's discretion. This leaves the entrepreneur the right to succeed or fail. It also means that sound overall credit may exist even when a borrower makes an unsound credit decision (p. 352).

The cautious view is epitomized by T.N. Carver's classic statement contained in the early editions of William Murray's *Agricultural Finance* textbook:

There is no magic about credit. It is a powerful agency for good in the hands of those who know how to use it. So is a buzz saw. They are about equally dangerous in the hands of those who do not understand them. Speaking broadly, there are probably almost as many farmers in this country who are suffering from too much as from too little credit. Many a farmer would be better off today if he had never had a chance to borrow money at all, or go into debt for the things which he bought. However, that is no reason why those farmers who do know how to use credit should not have it (p. 1).

Several studies address land values and include credit (and debt levels) in some manner. Reinsel and Reinsel (1979) analyzed the economics of asset prices and current income in farming. They noted that a concentration of land ownership and wealth was occurring in agriculture. They also noted that it often has been argued that more lenient credit terms were required to ease the entry of young people into farming, but such terms only benefit the earliest buyers. They maintained that the cash flow and equity advantages were soon bid into the price of land. This means that with each relaxation of credit terms, land prices can be expected to rise more rapidly, then resume a normal pattern of change with future benefits discounted (p. 1096).

Shalit and Schmitz (1982) developed a model of farmland accumulation to study factors influencing U.S. farmland values. The model stressed the manner in which credit is allocated for land purchases. To secure the necessary loans for expanding farm size, the farmer provides his net accumulated wealth as collateral. In addition to income and consumption, Shalit and Schmitz found the level of accumulated debt is one of the main determinants of farmland prices. The effects of owner equity on farmland price thus was examined. A derived demand for farmland was estimated as part of a structural equation model. Shalit and Schmitz showed that as the banking system increases the supply of credit to farmers with land as collateral, land values rise at a faster rate than if no credit were available (p. 718). Thus, the expansion and contraction of credit importantly affects the pace at which land prices increase or decrease.

Brown and Brown (1984) examined the effect of current farm prices on farm buyers' expectations about the future distribution of purchasing bids. Results based on Corn Belt and Lake State data did not disprove their model's prediction that optimists' expectations dominated the farmland market. They did not find interest rates or credit availability to be highly important in explaining land values.

Hughes et al. (1984) employed a capital asset pricing (CAP) model to examine subsidized credit offered by FmHA and its impact on agriculture. It was an attempt to quantitatively evaluate the impacts of subsidized credit on the farm real estate market. They concluded that government farm subsidies likely increased farm real estate values, farmers' holdings of financial assets, and farm debt. They felt the short-run impacts of such government programs were small, but that over the long run, the government credit programs had probably increased farm sector wealth by hundreds of billions of dollars by increasing the price of farmland. In their view, it was highly unlikely that the rapid rise in farm real estate values during the 1970's should be attributed principally to government intervention on farm credit markets, but likely was caused by other factors such as the rapid increase in farm exports.

In contrast to Brown and Brown, Raup (1989) analyzed the most recent farmland boom and bust cycle and concluded that the driving force in the boom was a search for size economies by neighboring farmers. The "wisdom" of buying farmland was not restricted to farmers, but it infused their

creditors as well. He noted that the conventional bid-price model used by creditors for valuing farmland encountered difficulty because of the rapid 1970's inflation and resultant negative interest rates. Real rates of interest on Federal Land Bank (FLB) farm mortgage loans were negative in 18 of the 32 quarters from 1973 through 1981 (Raup, p. 12).

Raup observed that booms in markets run on credit and, throughout the life of the 1970's farmland boom, credit was never a constraint (p. 8). It fueled the boom so that market-related debt was seen on a scale never before recorded in the United States (p. 9). In his view, this unique situation reflected an intense drive for market share by lenders, especially the FLB's, and to a smaller degree the Farmers Home Administration. Raup noted that life insurance companies were less aggressive until the mid-1970's when they reversed policies and became more active (p. 11). But he did not find life insurance lending to be as strong a driving force as that of the FLB's.

Carey (1990) believes that the heart of the 1970's farmland price boom and the 1980's farm credit crisis was the simultaneous existence of a land market deviation and a lender entity (FCS), organized as a cooperative, that was run by optimists about land prices. He feels that the FCS has a built-in propensity to finance land price deviations. This propensity is especially pernicious because the land market is especially vulnerable to deviations. By using the market price of an acre when determining its value as mortgage collateral, the FLB's took excessive risks.

Carey feels that, if the land market is always approximately efficient, the FCS does not appear especially likely to cause credit crises. But if land price deviations sometimes occur, the FCS is likely to be a destabilizing institution. He feels that the 1970's land price deviation was the result of excessive optimism about future farm income and land prices on the part of some agents in a market where optimistic agents set prices. The FLB's clearly did not respond in a risk-averse fashion to the associated risk.

Carey concluded that there is no evidence that the FCS deliberately financed or caused the credit crisis. Rather, the absence of all the usual risk control mechanisms from the FCS made it natural not to notice that it was setting up a credit crisis. He notes that lenders can prevent deviation-induced credit crises if they assess land at its fundamental productive value, but they probably cannot prevent the deviation itself. Lenders only amplify deviations and do not in general create them.

Carey believes that evidence on the behavior of farm lenders other than the FCS does not support a firm conclusion. Commercial lenders did not withdraw completely from farm mortgage markets, but they did not make more new loans than the flow of old loan repayments. Thus, they also took excessive risks, although not to the same extent as the FLB's. He feels that the lender with the worst structure (FLB's) was most to blame. The failure of other lenders to increase their loans outstanding as rapidly as the FLB's may have been due to FLB's lower interest rates, and to the effects of disintermediation on fund availability at insurance companies

and commercial banks. He feels that there is no evidence of a general recognition by commercial lenders that a deviation was in progress and that risk-avoidance strategies were required.

Ely and Vanderhoff (1990) in a study funded by the American Bankers Association were aggressively critical of the FCS, calling it a reckless lender to rural America that fueled a disastrous 1970's boom and 1980's bust in farmland prices. They blamed the Farm Credit Act of 1971 for liberalizing the collateral requirements and unleashing a farmland price boom. They regard the FCS during the 1970's as an imprudent lender. Debt-financed investments in farmland were made attractive and "This leveraging opportunity greatly stimulated the demand that inflated the enormous bubble in farmland values that finally burst in 1980" (p. 18). They feel that the low real interest rates of the 1970's, fed by plentiful quantities of credit "helped create a financial environment in which land values could skyrocket" (p. 19). Other lenders, in their view, including a specific reference to life insurance companies, were more cautious in their approach to the farm sector developments of the 1970's and earlier (pp. 1, 10).

Just and Miranowski (1993) developed a structural model of farmland prices based on 1963-86 data which included the multidimensional effects of inflation on capital erosion, savings-return erosion, and real debt reduction as well as the effect of changes in the opportunity cost of capital. The results showed that inflation and changes in real returns on capital are major explanatory factors in farmland price swings. In addition, Just and Miranowski explicitly studied the effects of credit market constraints and expectations schemes in the analytical model. Their model estimated only minor effects of credit availability on land prices (p. 167). Their observations also suggest that the farm debt bubble may have occurred more as a consequence of high land values than as a causal factor (p. 157).

Conclusions

The extensive farmland value literature contains an impressive list of factors that help determine farmland values. However, the list of price determinants from these studies is so long that it is evident why it is difficult to sort out the impacts of financial variables, such as credit, debt, interest rates, and related variables in determining farmland values.

The remarkable feature about these studies is their lack of consensus. Agricultural economists have tended to develop farmland value models that for a given study and data set always appear able to "predict" or were deemed successful in the eyes of the authors. At the individual study level, the work appears to be quite encouraging. But even though many of the land value models appear to work on the data at hand, they fail once applied to a different data set or to the same data set for a different time period.

Speculative or rational bubbles, which have been discovered and studied in recent years, are another factor that can influence farmland values. A speculative bubble is

essentially an overreaction to current price information. Several studies have been conducted to see if the 1970's farmland price boom resulted from a bubble. The empirical questions concerning the existence of speculative bubbles remain to be solved. Research on farmland investment decisions based on market fundamentals and the possibility of speculative bubbles shows little consensus.

The research to date concerning the role of credit in the 1970's farmland price boom also is inconclusive. Credit is only one of numerous factors influencing farmland values and it is difficult to isolate a single variable. It appears that credit is more than a benign facilitator but one finds it most difficult to make definitive conclusions concerning the 1970's. Critics of farm mortgage lenders maintain that their extension of excess credit with generous terms fueled higher land prices than market fundamentals justified. Their defenders, however, say that the lenders extended credit to willing borrowers under a rational economic scenario that included both current and capital gains from farmland. Lenders were just responding to a shift in credit demand.

Research demonstrates that the study of the relationship between mortgage credit and farmland values is extremely complex. Even in the narrowest sense the demand for mortgage credit to finance farmland as a productive asset is a derived demand conditional on the demand for farmland and all other inputs and output supply. Such credit is used as a means of obtaining control of land as an asset, but farmland has a number of other facets as a resource. Thus, it has been very difficult to isolate the effects of mortgage credit use on farmland values. One of the most important failings of many farmland value studies is the failure to recognize that farm income may not be adequate to explain agricultural land's market value.

Problems in conducting predictive farmland value research have arisen for a variety of reasons, including a heavy emphasis on ex post facto analysis of secondary data using formal frameworks. Attempts to replicate results of earlier land value studies have concluded that previously published models did not accurately reflect the relevant structural changes and other characteristics of the farmland market. Robison and Colyer (1994) concluded that the earlier studies did not produce cumulative knowledge or learning. They believe that instead of building refutable models, agricultural economists have constructed increasingly complex methodologies applied to fragile nonreplicable data sets that produce uninteresting results.

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Young Commercial Farmers: Their Financial Structure and Credit Sources

by Charles Dodson and Steve Koenig¹

Recent declines in new entrants into farming have raised concerns about the effectiveness of policies that aid new entrants. The growing capital requirements of today's production agriculture often are linked to the decline in persons entering farming. Research indicates most young commercial operators have ample financial resources. A small group has more limited financial resources and is more likely to need assistance in the form of grants or subsidized credits. These young low resource operators primarily obtain their credit through commercial banks and USDA farm loan programs. The results suggest that broad-based targeting of assistance programs based on age, or even years of experience, may be inappropriate.

Recent USDA research suggests that between 1992 and 2002, 500,000 older farmers will stop farming, to be replaced by only 250,000 new young farmers (Gale). For decades the declining number of new entrants into farming has been a public policy concern. High capital requirements per farm are often cited as a barrier faced by new entrants. To provide a more complete understanding of the financial constraints faced by young operators, we examine their financial structure, income, and credit sources.² This is accomplished using data from USDA's *Farm Costs and Returns Survey (FCRS)* covering 1991-92.

We focused on farm operators under the age of 40 who could be considered full-time farmers. Farm operators under the age of 40 total about 440,000 and represents 21 percent of all U.S. farms. Of these, only 140,000 (7 percent of U.S. farms) are considered *commercial*. The remaining 300,000 are considered to be *noncommercial* operators. Distinct structural differences exist between young commercial and noncommercial operators, especially concerning their reliance on farm income. Only 29 percent of young noncommercial operators were considered *farming dependent*, compared with 86 percent for young commercial operators. Commercial farm operators well-being will be primarily dependent on farm business financial performance. The well-being of noncommercial operator households, on the other hand, is more likely dependent on nonfarm factors. Hence, this analysis focuses primarily on young commercial farm operators.

Young commercial operators with less than \$150,000 net worth (*low resource*) represent about 40,000 farm operators or 1.9 percent of all U.S. farms. Young commercial operators with \$150,000 or more in net worth (*established*) represent about 100,000 or nearly 5 percent of all U.S. farms (table B-1). The \$150,000 net worth level is the lowest

The *FCRS* is a multiple frame survey conducted annually by USDA. Each farm surveyed represents a number of similar farms. It provides annual data on the financial and structural characteristics of all farm operators in the U.S. (Morehart, Johnson, and Banker).

Commercial farms reported greater than \$50,000 in annual sales, the operator's primary occupation was farming and the operator contributed 1,500 or more hours of labor to the farm business. *Noncommercial farms* represented all other farms.

Farming dependent was defined as receiving less than \$20,000 in nonfarm income and a majority of total household income is from the farm business.

Young operators were defined as being under 40 years of age while *older operators* were 40 years or older.

Low resource young operators were defined as commercial farmers under 40 years of age and having less than \$150,000 of net worth (capital).

Established young operators were defined as commercial operators under 40 years of age and reporting \$150,000 or more of net worth (capital).

Financially stressed farms reported negative net farm income and debt-to-asset ratios greater than 0.40.

Returns on assets were defined as (Net farm income - management charge - unpaid family labor + interest paid)/total assets]. The imputed management charge, 5 percent of the net value of production, was consistent with other USDA studies using *FCRS* data.

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² See box for definitions of terms in italics.

Defining a Young Operator

There is no standard definition of either a young farmer or a beginning farmer (new entrant). USDA defines a beginning farmer for the purposes of its farm credit programs as having no more than 10 years of farm experience. Farm experience is broadly defined by having day-to-day labor and management experience in the farm business. Other than being an adult, there are no age thresholds for eligibility to USDA's credit programs for beginning farmers.

The Farm Credit Administration (FCA) is required to report annually on the Farm Credit System's service to young, beginning, and small farmers. For reporting purposes, FCA defines young farmers as those under 35 years of age and beginning farmers as having less than 6 years of farm experience. Small farmers have less than \$100,000 in farm assets and less than \$40,000 in farm sales.

Following these broad guidelines, we define a young operator as being under 40 years of age. Data limitations restricted using years of farming experience to define new entrants. However, analysis of FCRS data for previous years found that about 80 percent of commercial farm operators under 40 years old reported less than 11 years of farming experience. Therefore, commercial farm operators under 40 should also be representative of new commercial entrants.

Table B-1—Balance sheet for commercial farms, by operator age and net worth classification

1991-92 averages	Under 40 years of age		Over 39 years of age
	Low resource	Established	
		<i>Dollars per farm</i>	
Total assets	174,024	694,511	799,029
Total current	37,290	134,230	141,085
Total noncurrent	136,734	560,281	657,944
Farm equipment	49,696	132,067	116,710
Breeding livestock	19,012	43,414	45,876
Land and buildings	67,521	381,523	489,541
Other	505	3,277	5,817
Total debt	95,267	141,143	118,220
Current	40,137	53,476	46,578
Operating loans	26,932	33,510	30,506
Other	14,271	21,254	16,709
Noncurrent	55,129	87,667	71,641
Nonreal estate	10,003	15,792	11,711
Real estate	45,126	71,874	59,931
Net worth	78,758	553,368	680,809
Debt per farm: 1/			
Farm Credit System	7,130	26,001	33,517
Commercial banks	34,859	48,085	39,296
USDA	29,297	10,328	14,113
Individual	7,357	19,418	10,579
Other lender	9,377	27,074	12,343
Market shares of debt by lender:		<i>Percent</i>	
Farm Credit System	8	20	31
Commercial banks	40	37	36
USDA	33	8	13
Individuals	8	15	10
Other lenders	11	21	11
Total	100	100	100
Distribution of lender's total farm operator debt: 2/			
Farm Credit System	1	14	56
USDA	11	11	47
Commercial banks	4	16	41
Individuals	3	20	35
Other lenders	3	24	34
Total debt	4	16	43

1/ Farm operator debt which does not include accounts payable and accrued interest payments, is not comparable to total debt above. 2/ Distributions total across to 100 percent when noncommercial farms are included.

threshold that could be used given sample size limitations. Increasing the threshold to \$250,000 expands the number of low net worth operators to about 70,000 or 3.5 percent of all U.S. farms. Sharp differences exist between these groups with respect to financial structure and performance and their sources of credit.

Financial Structure

The differences between low resource and established young commercial operators appeared very dramatic. On average, the value of assets held by young low resource operators is \$500,000 less than that of established young operators. Much of this difference can be explained by the value of land and buildings each group controls. Established young operators have a \$315,000 greater investment per farm in land and buildings than the low resource group. Established young operators also have significantly larger investments in machinery and equipment, as well as livestock.

Young low resource commercial operators display more financial stress than established young commercial operators. Low resource young operators carry greater debt relative to their total asset base and income-producing assets than do established young operators. They report an average debt-to-asset ratio of 0.54--much higher than the average 0.20 for established young operators. Also, 13 percent of low resource young operators are categorized as *financially stressed*, having negative net farm incomes and debt-to-asset ratios greater than 0.40. This compares with only 3 percent for established young operators. There are no significant differences in the debt structure, as both groups display about the same distribution of debt between current and noncurrent liabilities.

Because they owned more farm assets and had a relatively light debt burden, established young operators reported much more net worth per farm than low resource young operators. The net worth for low resource operators is less than \$79,000, far less than the \$553,000 reported by established young operators.

The characteristics of established young operators more closely resemble the characteristics of older commercial operators than those of young low resource operators. The debt-asset ratio of established young operators is only slightly higher than the average for operators over 40 years of age. Although less, the net worth of the established young operators compares closely with that of older commercial operators.

Sources of Credit

Young low resource commercial operators obtain nearly three-quarters of their financing needs from USDA and commercial banks. (Credit programs of the former Farmers Home Administration were transferred to USDA's Consolidated Farm Service Agency in late 1994). Banks supply 40 percent of this group's financing needs, slightly more than their 38-percent share of total farm operator debt. USDA was the primary source of credit to low resource

livestock farms, while commercial banks were the primary source to crop farms.

As expected from its mission, USDA's farm credit programs hold a small share of the total debt owed by established young commercial operators. While USDA is a primary supplier of credit to low resource young farmers, the bulk of USDA's credit goes to other classes of farmers. The largest share of USDA's farm operator debt (47 percent) is owed by older commercial operators. This is probably attributable to previous efforts by USDA to stabilize established young operators experiencing financial problems. This might change over the coming years as USDA targets an increasing share of its lending resources to young and beginning farmers, as required under 1992 legislation.

The Farm Credit System (FCS) does not appear to be active in financing young low resource commercial operators, as it has only an 8 percent market share for the group. Regardless of whether the farms specialized in livestock or crop production, FCS market share was significantly less than that of commercial banks or USDA. Only 1 percent of total farm operator debt held by FCS is owed by low resource young commercial operators. For established young operators, the FCS market share is larger, but still substantially less than for older commercial operators. The small FCS market shares can not be explained by the fact that young operators are low tenure and, therefore, own proportionally less real estate. The ratio of real estate liabilities to total debt for young low net worth operators is not very different than for other categories of operators.

When purchasing real estate or other farm assets, young operators with little money for down payments would be expected to negotiate directly with sellers for a contract of sale. However, this does not appear to be true, as individuals had only an 8-percent market share of debt owed by young low resource farmers.

Income Statement

At \$109,000, average gross cash farm income of low resource young operators is half that of established young operators (table B-2). Also, most expense items are proportionately higher for the low resource group. The proportionately higher expenses of low resource young operators leave them with proportionately lower net farm incomes. The net farm income for the low resource group is only one-fourth that of the established group.

Low resource commercial farmers operate a little less than half the acres of established young operators (table B-3). Low resource young operators are much more dependent on leased farmland than other commercial operators. It might be expected that low resource young operators would be more dependent on cash rented rather than share rented acres because landlords would find this group more risky and request cash payments up front. This is not evident, however, as reliance on cash rent is the same for both groups.

Table B-2—Income statistics for commercial farms, by operator age and by net worth classification

1991-92 averages	Under 40 years of age		Over 39 years of age
	Low resource	Established	
	<i>Dollars</i>		
Farm income:			
Gross cash income	108,919	218,147	205,590
Crop sales & CCC	52,042	106,300	91,565
Livestock sales	41,591	87,095	91,108
Def. & disaster payments	6,761	9,525	7,892
CRP payments	249	658	912
Other farm-related	8,276	14,568	14,113
Total cash expenses	92,031	169,009	162,084
Variable expenses	66,502	129,746	130,892
Farm origin	23,238	41,980	45,889
Manufactured inputs	21,057	38,859	35,295
Labor	6,476	20,804	22,821
Other	15,732	28,104	26,887
Fixed expenses	25,529	39,263	31,192
Net cash farm income	16,888	49,138	43,506
Depreciation expense	8,680	20,867	15,096
Net inventory change	217	8,652	6,287
Other noncash items	1,380	3,575	4,114
Net farm income	9,806	40,497	38,811
Household: 1/			
Total household income	24,622	47,224	49,702
Income from farming	14,427	33,825	30,232
Income from off-farm sources	10,195	13,398	19,470

1/ Farm income to the household included self-employment income plus amounts that operators pay themselves and other family members to work on the farm, net income from other farm business, and income from land rent.

Table B-3—Selected statistics for commercial farms, by operator age and net worth classification.

1991-92 averages	Under 40 years of age		Over 39 years of age
	Low resource	Established	
		<i>Number</i>	
Total U.S. farms	38,400	103,400	328,400
		<i>Acres</i>	
Land utilization:			
Operated	506	1,183	1,384
Owned	73	388	627
Cash rented	262	348	340
Share rented	178	225	193
		<i>Percent of farms</i>	
Renting some machinery	20	22	14
Specializing in:			
Livestock	47	48	51
Crop	53	52	49
Financially stressed 1/	13	3	4
Positive cash farm income	80	87	84
Positive net farm income	74	79	78
Farming dependent 2/	55	86	81
Farms with more than one household	1	16	15
Average operator age (years)	32	35	56
Annual hours of operator labor	2823	3186	2907
Average returns on assets (percent)	-1.2	4.3	2.6

1/ Defined as having negative net farm income and debt-asset ratio greater than 0.40. 2/ Less than \$20,000 of nonfarm income and majority of total household income is from the farm business.

Compared with older commercial operators, young operators are more likely to use leasing as a credit source, at least for machinery. However, there is not a significant difference in machinery leasing rates between low resource and established young operators. There is no significant evidence of livestock leasing within either group of operators.

A large percentage (80 percent) of low resource young operators report positive incomes. However, these operations also supply a large amount of unpaid operator labor (2,823 hours) relative to established young operators (3,186 hours) who had twice as much gross farm income and four times as much net farm income. The combination of low farm income (\$9,806) and large amounts of unpaid labor produces a negative return on assets of -1.2 percent. This implies that these operators are receiving less than the minimum wage for their labor.

Nearly all low resource young operators have only one household depending on income from the farm. Therefore, most of these operations likely are one-family operations independent of parents. In contrast, 16 percent of the established young commercial operations have more than one household depending on the farm business for income. Multiple households likely indicate the presence of a parent who has retired from farming and is transferring management and farm assets to the on-farm heirs.

Conclusions

The growing capital requirements of today's modern agriculture are frequently linked to the decline in the number of new entrants into commercial farming. The research presented here shows two distinct groups of young commercial operators. The group with the largest number farm operators displays high levels of financial resources and is unlikely to face major capital constraints. The smaller group reports limited financial resources and is likely to be constrained by the cost and availability of capital.

The dilemma faced by beginning and young farmers has been a popular policy concern. Federal and State programs recently have been enacted that assist these farmers (Wallace). Also, there likely will be some debate concerning young and beginning farmers as Congress considers the upcoming farm bill. Our results provide some insight into the need for and the likelihood of success of these programs. Using operator age or years of farming experience as a criteria for determining eligibility for credit programs may be inappropriate. While low resource young operators may benefit from special credit programs, more established operators will be able to obtain credit from conventional sources. The results suggest eligibility criteria should consider several factors such as net worth, household income, or total assets owned.

Low resource young operators receive a large portion of their financing from USDA. Hence, any legislative change that affects USDA's lending programs could affect the availability of credit to low resource farmers. Commercial banks are also a large provider of credit to low resource farmers and may be able to fill this gap if USDA's lending programs are curtailed.

Commercial banks' presence in financing low resource young operators could be due to their active participation in USDA's guaranteed loan programs. Likewise, the minimal FCS presence could be due to its lack of participation in the guaranteed program. Unfortunately, the FCRS does not include information on guaranteed loans.

Young commercial operators with low resources can often benefit from low interest loans and low down payment options. However, the extra income generated by these programs is not sufficient to make young low resource farmers more competitive with established young commercial operators. Low resource young operators typically lack the asset base to generate incomes sufficient to cover living expenses and provide for growth. To prosper, these operators might need an infusion of capital such as nonfarm equity such as limited partnerships.

In addition to providing low interest rate loans and low down payment options, policymakers could also consider options that encourage nonfarm equity investments. For example, State and Federal laws restricting the use of limited partnerships or subchapter S corporations could be examined. Tax incentives could be provided for nonfarm investors in low resource farming operations. Also, private institutions could be encouraged to provide grants to operators who are productive and efficient but have limited resources.

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List of Tables

Table	Page
1. Distribution of farm business debt, by lender, December 31, 1994	13
2. Delinquent farm loans, by lender, 1985-94	13
3. Farm loan losses (net chargeoffs), by lender, 1984-94	13
4. Nonperforming loans as a percentage of total loans, by type of bank, 1986-94	15
5. Number of agricultural banks, by definition, 1986-94	15
6. Selected bank performance measures, by type of bank, 1986-94	15
7. Agricultural lending of agricultural and nonagricultural banks, by bank size, June 30, 1994	17
8. Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 1994	17
9. Selected commercial bank profitability and efficiency measures, by bank size, June 30, 1994	17
10. Farm Credit System loan volume, by loan type, December 31, 1988-93 and September 30, 1994	19
11. Farm Credit System income statement, December 31, 1988-93 and September 30, 1994	19
12. Farm Credit System financial indicators, December 31, 1988-93 and September 30, 1994	19
13. Farm Credit System district-level financial statistics	21
14. Regulatory capital statistics, Farm Credit Banks and combined local associations, 1982-94	23
15. At-risk capital held in excess of regulatory minimum for Farm Credit Banks and combined associations, 1993	23
16. Consolidated Farm Service Agency farmer program obligations, September 30, 1986 to September 30, 1994	25
17. Consolidated Farm Service Agency direct farmer loan program delinquencies, September 30, 1986 to September 30, 1994	25
18. Consolidated Farm Service Agency major farmer program appropriations and obligations, fiscal 1994, and appropriations, fiscal 1995	27
19. Consolidated Farm Service Agency guaranteed farmer loan program delinquencies, September 30, 1986 to September 30, 1994	27
20. Life insurance company mortgage loan delinquencies, 1987-94	29
21. Life insurance company mortgage loans in the process of foreclosure, 1987-94	29
22. Life insurance company mortgage loans foreclosed, 1980-94	29
23. Explicit financial provisions and implicit financial impacts in the Food, Agriculture, Conservation and Trade Act of 1990	34
24. Other legislation significantly affecting agricultural and rural finance since 1985	34
Special Articles	
B-1. Balance sheet for commercial farms, by operator age and net worth classification	41
B-2. Income statistics for commercial farms, by operator age and net worth classification	43
B-3. Selected statistics for commercial farms, by operator age and net worth classification	43
Appendix Tables	
1. Total farm business debt by lender, December 31, 1977-94	46
2. Real estate farm business debt by lender, December 31, 1977-94	47
3. Nonreal estate farm business debt by lender, December 31, 1977-94	48
4. Interest rates on short-term loans, 1960-94	49
5. Interest rates on long-term loans, 1960-94	50
6. Commercial bank real estate lending by type of bank, June, 30, 1994	51
7. Banks reporting nonperforming loans greater than capital, 1984-94	51
8. Commercial bank failures, 1981-94	51

Appendix table 1—Total farm business debt by lender, December 31, 1977-94

	Debt owed to reporting institutions					Individuals and others 1/	Total debt
	Farm Credit System	Commercial banks	Cons.Farm Service Agency	Life insurance companies	Total		
Million dollars							
1977	32,992	31,289	6,378	8,150	78,808	32,047	110,855
1978	37,564	34,435	8,833	9,698	90,529	36,871	127,400
1979	45,376	37,125	14,442	11,278	108,222	43,329	151,551
1980	52,974	37,751	17,464	11,998	120,188	46,636	166,824
1981	61,566	38,798	20,802	12,150	133,316	49,065	182,381
1982	64,220	41,890	21,274	11,829	139,214	49,592	188,806
1983	63,710	45,422	21,428	11,668	142,228	48,842	191,070
1984	64,688	47,245	23,262	11,891	147,086	46,701	193,787
1985	56,169	44,470	24,535	11,273	136,447	41,152	177,599
1986	45,909	41,621	24,138	10,377	122,044	34,926	156,970
1987	40,030	41,130	23,553	9,355	114,069	30,342	144,411
1988	37,138	42,706	21,852	9,018	110,714	28,654	139,368
1989	36,218	44,795	18,974	9,045	109,030	28,201	137,231
1990	35,567	47,425	16,950	9,631	109,573	27,794	137,367
1991	35,382	50,169	15,213	9,494	110,259	28,526	138,785
1992	35,616	51,571	13,504	8,718	109,410	29,235	138,645
1993	35,412	54,519	12,073	8,980	110,984	30,921	141,905
1994P	36,339	59,276	11,070	9,010	115,695	32,360	148,055
Percent change in year							
1977	13.7	11.4	28.5	19.4	14.4	17.9	15.4
1978	13.9	10.1	38.5	19.0	14.9	15.1	14.9
1979	20.8	7.8	63.5	16.3	19.5	17.5	19.0
1980	16.7	1.7	20.9	6.4	11.1	7.6	10.1
1981	16.2	2.8	19.1	1.3	10.9	5.2	9.3
1982	4.3	8.0	2.2	-2.6	4.4	1.1	3.5
1983	-0.8	8.4	0.7	-1.4	2.2	-1.5	1.2
1984	1.5	4.0	8.6	1.9	3.4	-4.4	1.4
1985	-13.2	-5.9	5.5	-5.2	-7.2	-11.9	-8.4
1986	-18.3	-6.4	-1.6	-8.0	-10.6	-15.1	-11.6
1987	-12.8	-1.2	-2.4	-9.8	-6.5	-13.1	-8.0
1988	-7.2	3.8	-7.2	-3.6	-2.9	-5.6	-3.5
1989	-2.5	4.9	-13.2	0.3	-1.5	-1.6	-1.5
1990	-1.8	5.9	-10.7	6.5	0.5	-1.4	-0.1
1991	-0.5	5.8	-10.2	-1.4	0.6	2.6	1.0
1992	-0.7	2.8	-11.2	-8.2	0.8	2.5	-0.1
1993	-0.6	5.7	-10.6	-3.0	1.4	5.8	2.4
1994P	2.6	8.7	-8.3	0.3	4.2	4.7	4.3
Percentage distribution of total debt							
1977	29.8	28.2	5.8	7.4	71.1	28.9	100.0
1978	29.5	27.0	6.9	7.6	71.1	28.9	100.0
1979	29.9	24.5	9.5	7.4	71.4	28.6	100.0
1980	31.8	22.6	10.5	7.2	72.0	28.0	100.0
1981	33.8	21.3	11.4	6.7	73.1	26.9	100.0
1982	34.0	22.2	11.3	6.3	73.7	26.3	100.0
1983	33.3	23.8	11.2	6.1	74.4	25.6	100.0
1984	33.4	24.4	12.0	6.1	75.9	24.1	100.0
1985	31.6	25.0	13.8	6.3	76.8	23.2	100.0
1986	29.2	26.5	15.4	6.6	77.7	22.3	100.0
1987	27.7	28.5	16.3	6.5	79.0	21.0	100.0
1988	26.6	30.6	15.7	6.5	79.5	20.5	100.0
1989	26.4	32.6	13.8	6.6	79.5	20.5	100.0
1990	25.9	34.5	12.3	7.0	79.8	20.2	100.0
1991	25.5	36.1	11.0	6.8	79.4	20.6	100.0
1992	25.7	37.2	9.7	6.3	78.9	21.1	100.0
1993	25.0	38.4	8.5	6.3	78.2	21.8	100.0
1994P	24.5	40.0	7.5	6.1	78.1	21.9	100.0

P = Preliminary. 1/ Includes individuals and others (land for contract, merchants and dealers credit, etc.), CCC storage and drying facilities loans, and Farmer Mac loans.

Appendix table 2—Real estate farm business debt by lender, December 31, 1977-94

	Debt owed to reporting institutions					Individuals and others 1/	CCC storage and drying facilities	Total real estate
	Farm Credit System	Cons. Farm Service Agency	Life insurance companies	Commercial banks	Total			
Million dollars								
1977	19,640	3,613	8,150	6,994	38,397	19,556	492	58,445
1978	22,686	3,746	9,698	7,717	43,847	21,712	1,148	66,707
1979	27,322	6,254	11,278	7,798	52,653	25,660	1,391	79,704
1980	33,225	7,435	11,998	7,765	60,423	27,813	1,456	89,692
1981	40,298	8,096	12,150	7,584	68,128	29,318	1,342	98,788
1982	43,661	8,298	11,829	7,568	71,357	29,326	1,127	101,810
1983	44,318	8,573	11,668	8,347	72,906	29,388	888	103,182
1984	46,596	9,523	11,891	9,626	77,636	28,438	623	106,697
1985	42,169	9,821	11,273	10,732	73,994	25,775	307	100,076
1986	35,593	9,713	10,377	11,942	67,725	22,660	123	90,408
1987	30,646	9,430	9,355	13,541	62,972	19,380	46	82,398
1988	28,372	8,953	9,018	14,397	60,740	16,873	21	77,634
1989	26,674	8,130	9,045	15,551	59,400	15,939	12	75,351
1990	25,719	7,576	9,631	16,158	59,083	15,047	7	74,137
1991	25,160	7,001	9,494	17,315	58,970	15,537	4	74,511
1992	25,271	6,361	8,718	18,659	59,009	16,003	2	75,014
1993	24,872	5,834	8,980	19,580	59,266	16,711	0	75,977
1994P	24,627	5,391	9,010	21,038	60,066	17,170	0	77,236
Percent change in year								
1977	16.3	9.1	19.4	15.1	16.0	13.3	241.7	15.7
1978	15.5	3.7	19.0	10.3	14.2	11.0	133.3	14.1
1979	20.4	67.0	16.3	1.0	20.1	18.2	21.2	19.5
1980	21.6	18.9	6.4	-0.4	14.8	8.4	4.7	12.5
1981	21.3	8.9	1.3	-2.3	12.8	5.4	-7.8	10.1
1982	8.3	2.5	-2.6	-0.2	4.7	0.0	-16.0	3.1
1983	1.5	3.3	-1.4	10.3	2.2	0.2	-21.2	1.3
1984	5.1	11.1	1.9	15.3	6.5	-3.2	-29.8	3.4
1985	-9.5	3.1	-5.2	11.5	-4.7	-9.4	-50.7	-6.2
1986	-15.6	-1.1	-7.9	11.3	-8.5	-12.1	-59.9	-9.7
1987	-13.9	-2.9	-9.8	13.4	-7.0	-14.5	-62.6	-8.9
1988	-7.4	-5.2	-3.6	6.3	-3.5	-12.9	-54.3	-5.8
1989	-3.6	-9.2	0.3	8.0	-2.2	-5.5	-42.9	-2.9
1990	-2.2	-6.8	6.4	3.9	-0.5	-5.6	-41.7	-1.6
1991	-0.6	-7.6	-1.4	7.2	-0.2	3.3	-42.9	0.5
1992	-0.4	-9.1	-8.2	7.8	0.1	3.0	-50.0	0.7
1993	-1.6	-8.3	3.0	4.9	0.4	4.4	-100.0	1.3
1994P	-1.0	-7.6	3.3	7.4	1.3	2.7	0.0	1.7
Percentage distribution of debt								
1977	33.6	6.2	13.9	12.0	65.7	33.5	0.8	100.0
1978	34.0	5.6	14.5	11.6	65.7	32.5	1.7	100.0
1979	34.3	7.8	14.2	9.8	66.1	32.2	1.7	100.0
1980	37.0	8.3	13.4	8.7	67.4	31.0	1.6	100.0
1981	40.8	8.2	12.3	7.7	69.0	29.7	1.4	100.0
1982	42.9	8.2	11.6	7.4	70.1	28.8	1.1	100.0
1983	43.0	8.3	11.3	8.1	70.7	28.5	0.9	100.0
1984	43.7	8.9	11.1	9.0	72.8	26.7	0.6	100.0
1985	42.1	9.8	11.3	10.7	73.9	25.8	0.3	100.0
1986	39.4	10.7	11.5	13.2	74.8	25.1	0.1	100.0
1987	37.2	11.4	11.4	16.4	76.4	23.5	0.1	100.0
1988	36.5	11.5	11.6	18.5	78.2	21.7	0.0	100.0
1989	35.4	10.8	12.0	20.6	78.8	21.2	0.0	100.0
1990	34.7	10.2	13.0	21.8	79.6	20.3	0.0	100.0
1991	33.8	9.4	12.7	23.2	79.1	20.9	0.0	100.0
1992	33.7	8.5	11.6	24.9	78.7	21.3	0.0	100.0
1993	32.7	7.7	11.8	25.8	78.0	22.0	0.0	100.0
1994P	31.9	7.0	11.7	27.2	77.8	22.2	0.0	100.0

P = Preliminary 1/ Including Farmer Mac loans.

Appendix table 3—Nonreal estate farm business debt by lender, December 31, 1977-94

	Debt owed to reporting institutions				Individuals and others	Total nonreal estate	CCC crop loans
	Commercial banks	Farm Credit System	Cons. Farm Service Agency	Total			
Million dollars							
1977	24,295	13,352	2,764	40,411	11,999	52,410	4,146
1978	26,718	14,878	5,086	46,682	14,011	60,693	4,646
1979	29,327	18,054	8,188	55,569	16,278	71,847	3,714
1980	29,986	19,750	10,029	59,765	17,367	77,132	3,836
1981	31,215	21,268	12,706	65,189	18,404	83,593	6,888
1982	34,322	20,558	12,977	67,857	19,139	86,996	15,204
1983	37,075	19,392	12,855	69,322	18,566	87,888	10,576
1984	37,619	18,092	13,740	69,451	17,640	87,091	8,428
1985	33,738	14,001	14,714	62,453	15,070	77,523	17,598
1986	29,678	10,317	14,425	54,420	12,143	66,563	19,190
1987	27,589	9,384	14,123	51,096	10,916	62,012	15,120
1988	28,309	8,766	12,899	49,974	11,760	61,734	8,902
1989	29,243	9,544	10,843	49,631	12,250	61,881	5,225
1990	31,267	9,848	9,374	50,490	12,740	63,230	4,377
1991	32,854	10,222	8,213	51,289	12,985	64,274	3,579
1992	32,912	10,346	7,143	51,401	13,230	63,631	4,771
1993	34,939	10,540	6,239	51,717	14,210	65,927	3,170
1994P	38,237	11,712	5,680	55,629	15,190	70,819	4,000
Percent change in year							
1977	10.4	10.1	67.3	12.9	22.6	15.0	342.9
1978	10.0	11.4	84.0	15.5	16.8	15.8	12.1
1979	9.8	21.3	61.0	19.0	16.2	18.4	-20.1
1980	2.2	9.4	22.5	7.6	6.7	7.4	3.3
1981	4.1	7.7	26.7	9.1	6.0	8.4	79.6
1982	10.0	-3.3	2.1	4.1	4.0	4.1	120.7
1983	8.0	-5.7	-0.9	2.2	-3.0	1.0	-30.4
1984	1.5	-6.7	6.9	0.2	-5.0	-0.9	-20.3
1985	-10.3	-22.6	7.1	-10.1	-14.6	-11.0	108.8
1986	-12.0	-26.3	-2.0	-12.9	-19.4	-14.1	9.0
1987	-7.0	-9.0	-2.1	-6.1	-10.1	-6.8	-21.2
1988	2.6	-6.6	-8.7	-2.2	7.7	-0.5	-41.1
1989	3.3	8.9	-15.9	-0.7	4.2	0.2	-41.3
1990	6.9	3.2	-13.5	1.7	4.0	2.2	-16.2
1991	5.1	3.8	-12.4	1.6	1.9	1.7	-18.2
1992	0.2	1.2	-13.0	0.2	1.9	0.6	33.3
1993	6.2	1.9	-12.7	-0.6	7.4	3.6	-33.6
1994P	9.4	11.1	-9.0	7.6	6.9	7.4	26.2
Percentage distribution of debt							
1977	46.4	25.5	5.3	77.1	22.9	100.0	
1978	44.0	24.5	8.4	76.9	23.1	100.0	
1979	40.8	25.1	11.4	77.3	22.7	100.0	
1980	38.9	25.6	13.0	77.5	22.5	100.0	
1981	37.3	25.4	15.2	78.0	22.0	100.0	
1982	39.5	23.6	14.9	78.0	22.0	100.0	
1983	42.2	22.1	14.6	78.9	21.1	100.0	
1984	43.2	20.8	15.8	79.7	20.3	100.0	
1985	43.5	18.1	19.0	80.6	19.4	100.0	
1986	44.6	15.5	21.7	81.8	18.2	100.0	
1987	44.5	15.1	22.8	82.4	17.6	100.0	
1988	45.9	14.2	20.9	81.0	19.0	100.0	
1989	47.3	15.4	17.5	80.2	19.8	100.0	
1990	49.5	15.6	14.8	79.8	20.1	100.0	
1991	51.1	15.9	12.8	79.8	20.2	100.0	
1992	51.7	16.3	11.2	79.5	20.8	100.0	
1993	53.0	16.0	9.5	78.4	21.6	100.0	
1994P	54.0	16.5	8.0	78.6	21.4	100.0	

P = Preliminary

Appendix table 4—Interest rates on short-term loans, 1960-94

Year	Prime rate	6-month T-Bill 1/	Agricultural nonreal estate						Average on out-standing debt 3/
			Commercial banks			Farm Credit System	CFSA 2/		
			All banks	Large banks	Other banks		Regular	Limited resource	
1960	4.82	NA	NA	NA	NA	NA	5.00	NA	6.58
1965	4.54	NA	NA	NA	NA	NA	5.00	NA	6.38
1970	7.91	6.87	NA	NA	NA	9.45	6.88	NA	7.84
1975	7.86	6.39	NA	NA	NA	9.11	8.63	NA	8.21
1980	15.27	12.39	15.20	16.70	15.00	12.74	11.00	6.82	11.70
1981	18.87	15.06	18.50	19.80	18.10	14.46	14.04	8.13	13.34
1982	14.86	11.96	16.70	16.10	17.00	14.58	13.73	10.75	13.31
1983	10.79	9.27	13.50	12.10	14.10	11.95	10.31	7.31	12.14
1984	12.04	10.46	14.10	13.10	14.40	12.47	10.25	7.25	11.88
1985	9.93	8.09	12.80	11.20	13.40	12.40	10.25	7.25	10.61
1986	8.33	6.30	11.50	9.60	12.10	11.23	8.66	5.66	10.23
1987	8.21	6.35	10.60	9.20	11.30	10.10	8.12	5.27	10.53
I	7.50	5.78	10.10	8.40	11.20	10.10	7.50	4.50	NA
II	8.05	6.30	10.70	9.40	11.20	10.00	7.50	4.50	NA
III	8.40	6.49	10.40	9.30	11.10	10.00	8.75	5.57	NA
IV	8.87	6.82	11.00	9.60	11.60	10.30	8.75	6.33	NA
1988	9.32	7.27	11.20	10.20	11.60	10.56	9.02	6.02	10.50
I	8.59	6.35	11.00	9.70	11.60	10.48	9.00	6.00	NA
II	8.78	6.81	10.70	9.70	11.30	10.51	8.67	5.67	NA
III	9.71	7.63	11.50	10.70	11.80	10.43	9.00	6.00	NA
IV	10.18	8.27	11.60	11.10	11.80	10.82	9.42	6.42	NA
1989	10.88	8.50	12.50	12.10	12.70	11.68	9.10	6.10	10.64
I	10.98	9.09	12.30	12.10	12.40	11.63	9.40	6.40	NA
II	11.36	8.86	12.90	12.80	13.00	12.11	9.50	6.50	NA
III	10.66	8.12	12.50	12.00	12.80	11.55	9.00	6.00	NA
IV	10.50	7.91	12.10	11.60	12.50	11.41	9.42	5.50	NA
1990	10.01	7.87	11.40	10.90	12.30	11.16	8.90	5.82	10.76
I	10.04	8.11	11.80	11.20	12.30	11.20	8.50	5.50	NA
II	10.00	8.19	11.80	11.40	12.30	11.20	9.01	6.01	NA
III	10.00	7.82	10.90	10.20	12.30	11.14	9.08	6.08	NA
IV	10.00	7.36	11.50	11.00	12.20	11.10	9.00	5.67	NA
1991	8.47	5.72	9.80	9.00	11.30	10.10	8.25	5.00	9.86
I	9.19	6.34	10.40	9.60	11.60	10.59	8.50	5.00	NA
II	8.67	5.98	9.80	9.10	11.50	10.25	8.25	5.00	NA
III	8.40	5.74	10.10	9.40	11.50	10.02	8.25	5.00	NA
IV	7.60	4.82	9.00	8.10	10.70	9.59	8.01	5.00	NA
1992	6.25	3.69	7.80	6.80	9.40	8.20	6.79	5.00	8.59
I	6.50	4.16	8.00	6.80	9.70	8.51	7.17	5.00	NA
II	6.50	3.97	8.30	7.20	9.70	8.38	7.00	5.00	NA
III	6.01	3.30	7.80	6.80	9.40	8.09	7.00	5.00	NA
IV	6.00	3.34	7.40	6.30	8.90	7.81	6.00	5.00	NA
1993	6.00	3.23	7.50	6.70	8.70	8.09	5.88	5.00	8.29
I	6.00	3.20	7.60	6.60	8.80	8.35	6.33	5.00	NA
II	6.00	3.19	7.50	6.70	8.90	8.15	6.00	5.00	NA
III	6.00	3.22	7.50	7.00	8.60	8.08	5.75	5.00	NA
IV	6.00	3.32	7.30	6.70	8.60	7.77	5.42	5.00	NA
1994	7.14	4.83	7.70	7.10	8.75	8.23	6.46	5.00	8.91
I	6.02	3.57	7.20	6.50	8.20	7.46	5.25	5.00	NA
II	6.90	4.61	7.70	6.90	8.60	8.06	6.08	5.00	NA
III	7.50	5.11	7.70	7.30	9.00	8.44	7.25	5.00	NA
IV	8.13	6.02	8.20	7.70	9.20	8.96	7.25	5.00	NA

NA = Not Available. 1/ Auction average investment yield. 2/ New operating loans. Rates are weighted by length of time each was in effect. 3/ Average on outstanding farm business debt.

Appendix table 5—Interest rates on long-term loans, 1960-94

Year	Agricultural real estate							
	U.S. Treasury bond 1/	Commercial banks	Farm Credit System	Life insurance companies 2/	CFSA 3/		Average on outstanding debt 4/	Average on total farm debt 5/
					Regular	Limited resource		
Percent								
1960	4.02	NA	NA	NA	5.00	NA	5.01	5.79
1965	4.21	NA	NA	NA	5.00	NA	5.36	5.84
1970	6.58	8.27	8.68	9.31	5.00	NA	5.88	6.73
1975	7.00	9.02	8.69	10.03	5.00	NA	6.98	7.55
1980	10.81	13.76	10.39	13.21	11.05	4.82	8.17	9.82
1981	12.87	16.75	11.27	15.42	13.00	5.50	8.91	10.95
1982	12.23	16.63	12.27	15.51	12.94	6.50	9.60	11.31
1983	10.84	13.76	11.63	12.47	10.79	5.27	9.70	10.83
1984	11.99	14.07	11.76	13.49	10.75	5.25	9.41	10.54
1985	10.75	12.96	12.24	12.61	10.75	5.25	8.73	9.57
1986	8.15	11.56	11.61	11.96	9.13	5.06	8.76	9.39
1987	8.64	11.07	11.10	10.21	8.90	5.00	8.94	9.62
I	7.64	10.78	11.40	9.48	8.25	5.00	NA	NA
II	8.58	11.02	10.90	9.97	8.25	5.00	NA	NA
III	9.08	11.26	10.75	10.50	9.25	5.00	NA	NA
IV	9.24	11.20	11.50	10.88	9.83	5.00	NA	NA
1988	8.98	11.42	10.10	10.05	9.46	5.00	9.24	9.79
I	8.61	11.04	9.88	10.13	9.50	5.00	NA	NA
II	9.06	11.18	9.82	9.90	9.17	5.00	NA	NA
III	9.20	11.60	10.06	10.08	9.50	5.00	NA	NA
IV	9.03	11.84	10.56	10.70	9.67	5.00	NA	NA
1989	8.59	12.08	10.93	10.47	9.46	5.00	9.52	10.02
I	9.19	12.36	10.82	10.71	9.50	5.00	NA	NA
II	8.84	12.18	11.01	10.54	9.17	5.00	NA	NA
III	8.25	11.98	10.62	10.23	9.50	5.00	NA	NA
IV	8.07	11.78	10.65	10.40	9.67	5.00	NA	NA
1990	8.73	11.69	10.56	10.25	8.94	5.00	9.58	10.12
I	8.60	11.74	10.62	9.62	8.75	5.00	NA	NA
II	8.81	11.68	10.67	10.10	9.09	5.00	NA	NA
III	8.91	11.72	10.49	10.30	9.08	5.00	NA	NA
IV	8.61	11.60	10.45	10.97	9.00	5.00	NA	NA
1991	8.16	10.76	9.85	10.01	8.73	5.00	8.93	9.36
I	8.28	11.24	10.19	10.52	8.83	5.00	NA	NA
II	8.39	11.04	9.96	9.99	8.75	5.00	NA	NA
III	8.21	10.76	9.84	9.85	8.75	5.00	NA	NA
IV	7.76	10.00	9.42	9.68	8.58	5.00	NA	NA
1992	7.55	9.45	8.25	8.74	8.13	5.00	8.44	8.51
I	7.73	9.72	8.43	9.09	8.25	5.00	NA	NA
II	7.90	9.66	8.56	9.30	8.25	5.00	NA	NA
III	7.22	9.22	8.13	8.59	8.25	5.00	NA	NA
IV	7.34	9.18	7.86	7.97	7.75	5.00	NA	NA
1993	6.45	8.64	7.83	7.60	7.29	5.00	7.75	8.00
I	6.90	8.88	8.20	7.34	7.75	5.00	NA	NA
II	6.62	8.70	7.80	7.77	7.42	5.00	NA	NA
III	6.15	8.56	7.79	7.65	7.25	5.00	NA	NA
IV	6.14	8.42	7.54	7.62	6.75	5.00	NA	NA
1994	7.41	NA	8.57	8.05	7.42	5.00	7.97	8.41
I	6.53	8.60	7.99	7.60	6.50	5.00	NA	NA
II	7.41	9.08	8.37	7.95	7.17	5.00	NA	NA
III	7.66	9.26	8.70	8.13	8.00	5.00	NA	NA
IV	8.05	NA	9.21	8.40	8.00	5.00	NA	NA

NA = Not Available. 1/ Unweighted average of rates on all outstanding bonds neither due nor callable in less than 10 years. 2/ Estimated by ERS from survey data. 3/ New farm ownership loans. Rates weighted by length of time each of the various weights existing in the quarter were in effect. 4/ Average on outstanding farm business debt. 5/ Total farm debt includes both real and nonreal estate loans.

Appendix table 6—Commercial bank real estate lending, by type of bank, June 30, 1994

Bank group	Commercial banks	Real estate loans/ total loans	Nonperforming real estate loans/ total real estate loans 1/	Total nonperforming loans/ total loans	Nonperforming real estate/ nonperforming loans	Weak banks 2/
	<i>Number</i>	<i>Percent</i>				<i>Number</i>
All banks	10,675	42.4	2.24	1.61	58.9	27
Agricultural	3,689	44.7	1.12	1.13	44.2	3
Small nonagricultural	6,355	60.2	1.37	1.32	62.5	23
Large nonagricultural	631	38.4	2.60	1.70	58.8	1
Urban	4,684	40.7	2.44	1.67	59.4	22
Rural	5,991	54.4	1.12	1.13	54.2	5

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. 2/ Weak banks are banks with total nonperforming loans in excess of total capital.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Appendix table 7—Banks reporting nonperforming loans greater than capital, 1984-94 1/

Year 2/	Agricultural banks		Nonagricultural banks		Total banks	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
1984	93	1.86	94	1.00	187	1.30
1985	141	2.91	130	1.38	273	1.91
1986	158	3.36	230	2.47	388	2.77
1987	84	1.88	241	2.67	325	2.41
1988	54	1.25	238	2.76	292	2.30
1989	31	.74	181	2.14	212	1.68
1990	13	.32	130	1.58	143	1.17
1991	13	.33	107	1.35	120	1.01
1992	5	.13	55	.73	60	.53
1993	2	.05	30	.42	32	.29
1994	3	.08	24	.34	27	.25

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. Total capital includes total equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt. 2/ The 1994 numbers are as of June 30, all others are December 31.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

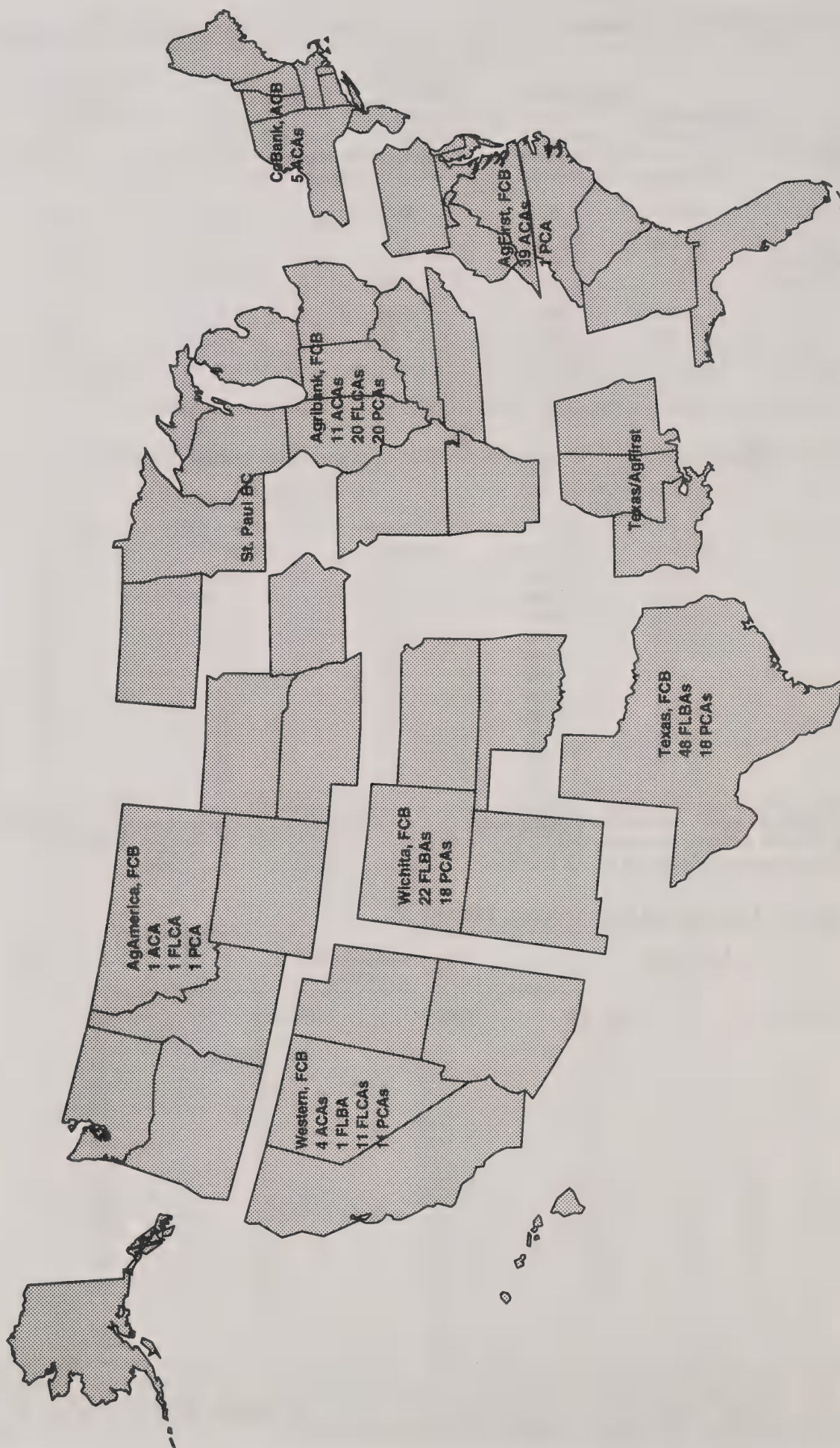
Appendix table 8—Commercial bank failures, 1981-94 1/

Year	Agricultural banks		Nonagricultural banks		Total banks	
	<i>Number 2/</i>	<i>Percent 3/</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
1981	1	0.02	9	0.10	10	0.07
1982	10	0.19	23	0.25	33	0.23
1983	7	0.14	37	0.40	44	0.31
1984	31	0.62	47	0.50	78	0.54
1985	69	1.42	49	0.52	118	0.83
1986	66	1.41	78	0.84	144	1.03
1987	75	1.67	127	1.41	202	1.50
1988	41	0.95	180	2.09	221	1.71
1989	22	0.53	184	2.18	206	1.63
1990	18	0.44	141	1.76	159	1.30
1991	10	0.25	98	1.24	108	0.91
1992	7	0.18	93	1.23	100	0.88
1993	3	0.08	33	0.46	36	0.33
1994 4/	0	0.00	11	0.16	11	0.10
Total	360	NA	1,110	NA	1,470	NA

NA=Not available. 1/ Counts of failures exclude mutual savings banks, savings and loan associations, commercial banks not insured by the FDIC, and banks headquartered in U.S. possessions and territories. Failures are those declared insolvent and closed by their chartering authorities plus those granted open bank assistance by the FDIC. 2/ Agricultural bank status is based on June loan data from the year prior to the bank's failure. 3/ Failures during the year as a percentage of total banks of this type remaining at the end of the year. 4/ Percentages for 1994 use June 30, 1994 data on numbers of banks in the denominators.

Sources: Calculated from information provided by the Federal Deposit Insurance Corporation and the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Appendix Figure 1—Farm Credit System Banks and Associations, April 1, 1995*



*Associations affiliated with Texas, FCB, include 3 PCAs in New Mexico, 2 FLBAs in Alabama, 2 FLBAs in Mississippi, and 2 FLBAs and 1 PCA in Louisiana. Associations affiliated with AgFirst, FCB, include 1 ACA in Ohio, 2 ACAs in Kentucky, 1 ACA in Tennessee, and 1 PCA serving Alabama, Mississippi, and most of Louisiana. CoBank--National Bank for Cooperatives, Springfield Bank for Cooperatives, and Springfield, Farm Credit Bank, merged on January 1, 1995 to form CoBank, Agricultural Credit Bank. On April 1, 1995, the Baltimore and Columbia Farm Credit Banks will merge to form AgFirst Farm Credit Bank, pending regulatory approval.

Source: "Annual Corporate Restructuring Report", Farm Credit Administration, January 1, 1995.

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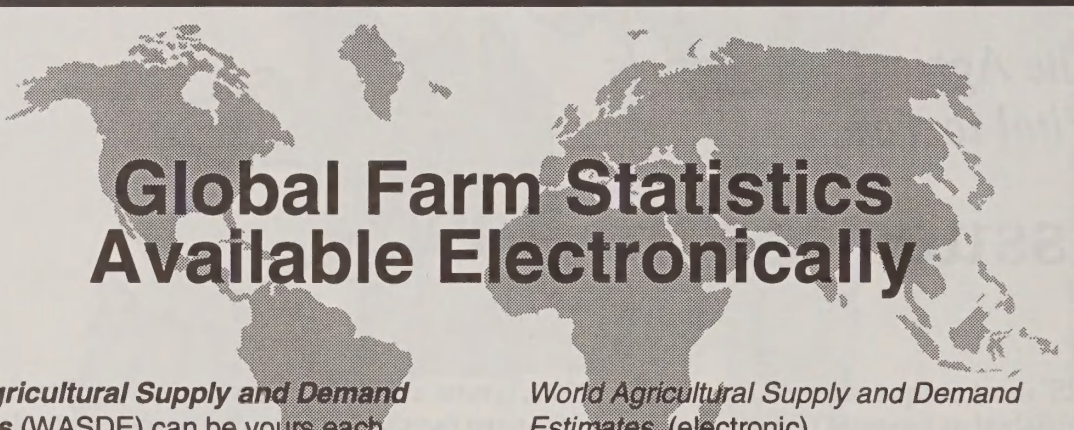
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